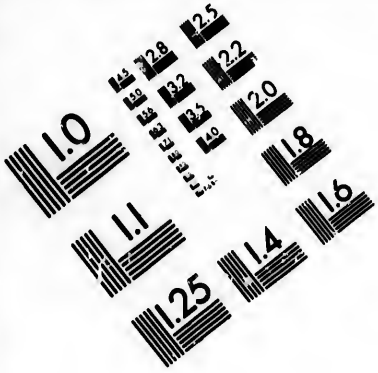

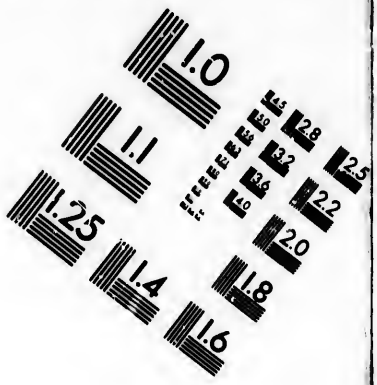

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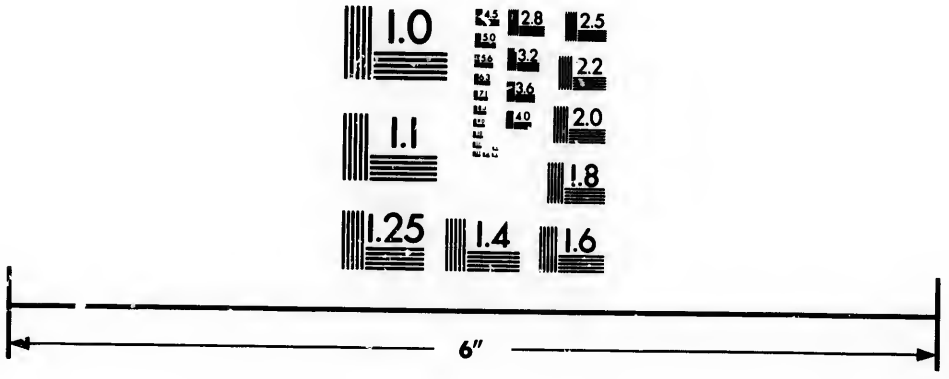

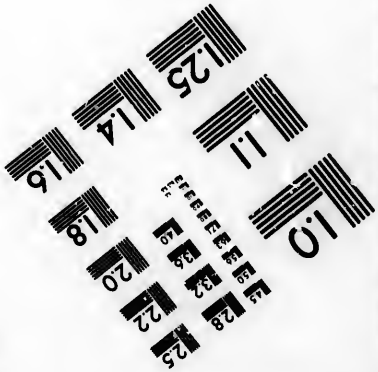

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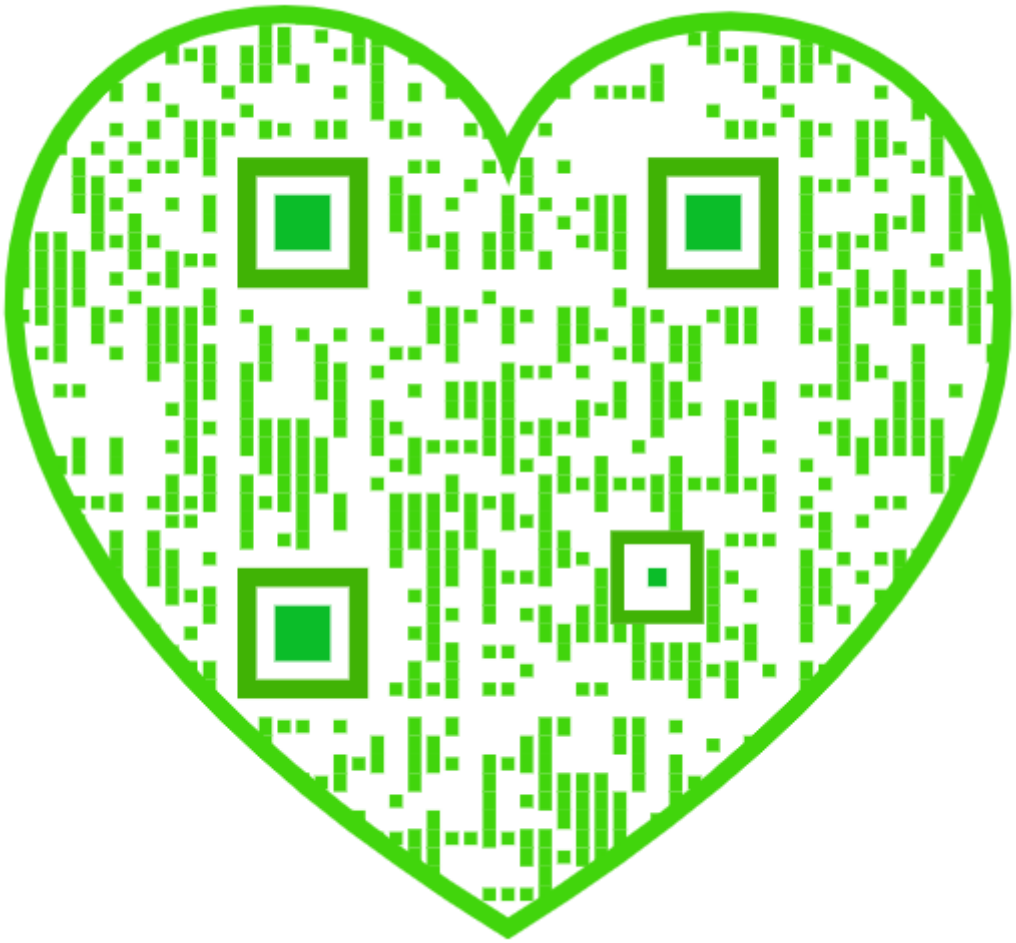

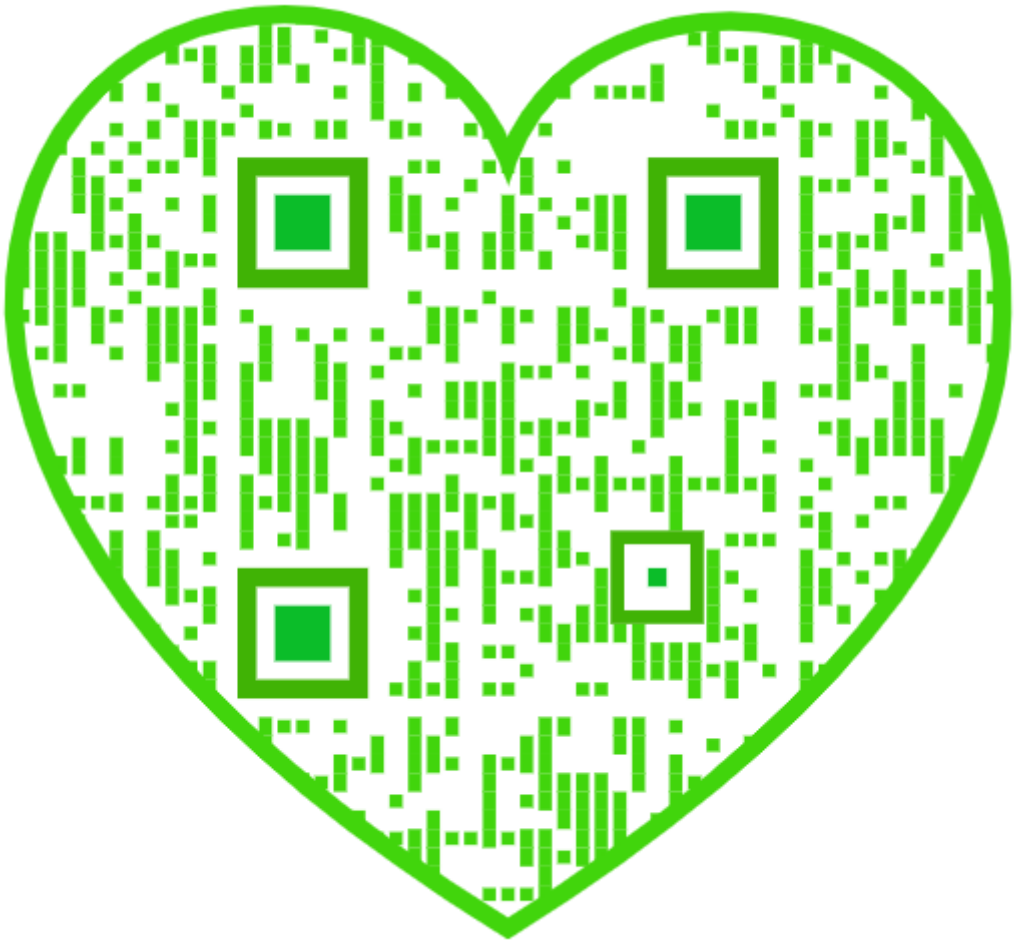

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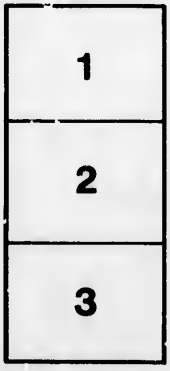

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SAILING DIRECTIONS

FOR

THE GULF AND RIVER

ST. LAWRENCE;

WITH

AN APPENDIX,

CONTAINING A DESCRIPTION OF THE HARBOURS OF

HALIFAX, AND ST. JOHN'S, N.B.

Compiled from the most recent Surveys.

LONDON, E.:
PUBLISHED BY JAMES IMRAY AND SON,
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SAILING DIRECTIONS

FOR THE

GULF AND RIVER ST. LAWRENCE.

*** The Bearings and Courses throughout this work are by compass, unless expressed thus (E.N.E.), and are for still water; the utmost attention should, therefore, be given whenever they lead across the stream of tide, whether directly or obliquely, and due allowance be made for their influence. The depths refer to low water, spring-tides; the range of a tide means the difference between its low and high water levels. The distances are in nautical miles of 60 to each degree of latitude.

The amount of westerly variation in 1861 at the various points within the limits of this work, was as follows:—

Cape Ray	27° 45′	Anticosti (West Cape) .	27° 18′
Cape North (Breton I.) .	25° 45′	Cape Whittle	31° 50′
Scatari Island	24° 45′	Natashquan Point . .	30° 18′
Gut of Canso	22° 45′	Mingan Islands . . .	28° 18′
St. Paul's Island . . .	26° 30′	The Seven Islands . .	26° 15′
Amherst I. (Magdalen Is.)	25° 00′	Cape Magdalen . . .	25° 45′
Pictou Bay	22° 5′	Cape Chatte	24° 15′
Miramichi Bay	22°	Point des Monts . . .	23° 45′
Chaleur Bay (Entrance)	24° 18′	Bic Island	20° 25′
Dalhousie (Chaleur Bay)	22° 35′	Green Island	19° 12′
Cape Gaspe	25° 48′	Coudres Island . . .	17° 0′
Anticosti (East Cape) .	28° 18′	Quebec	15° 12′

The estimated annual increase in the Gulf of St. Lawrence is 6′, and the general line of equal variation runs N.W. by W. and S.E. by E., *true*. In the River St. Lawrence it is 4′, and the lines of equal variation run N.W. ½ W. and S.E. ½ E., *true*.

PART I.

THE GULF OF ST. LAWRENCE.

GENERAL REMARKS.

It has always been supposed that the navigation of the Gulf and River St. Lawrence is attended with considerable difficulty, and the numerous accidents constantly occurring to vessels would seem to show that the opinion is well founded.

Admiral Bayfield, R.N., has remarked that, "Among the difficulties of the navigation, may be mentioned the ice. In spring the entrance and the eastern parts of

the Gulf are frequently covered with it, and vessels are sometimes beset for many days. Being unfitted for contending with the danger, they often suffer from it, and are occasionally lost; but serious accidents from this cause do not frequently occur, because the ice is generally in a melting state from the powerful effect of the sun in spring. In the fall of the year accidents from ice seldom occur, except when the winter commences suddenly; or when vessels linger imprudently late from the temptation of obtaining high freights.

But all danger from ice is far less than that which arises from the prevalent fogs: they may occur at any time during the open or navigable season, but are most frequent in the early part of summer; they are rare, and never of long continuance during westerly winds, but seldom fail to accompany an easterly wind of any strength or duration. The above general observation is subject, however, to restriction, according to locality, or season. Thus winds between the south and west, which are usually clear weather winds above Anticosti, are frequently accompanied with fog in the eastern parts of the gulf. Winds between the south and east are almost always accompanied with rain and fog in every part. E.N.E. winds above Point de Monts are often E.S.E. or S.E. winds in the Gulf, changed in direction by the high lands of the south coast, and have therefore in general the same foggy character. I speak of winds of considerable strength and duration, and which probably extend over great distances. Moderate and partial fine weather winds may occur without fog at any season, and in any locality. In the early part of the navigable season, especially in the months of April and May, clear weather N.E. winds are of frequent occurrence, and they also sometimes occur at other seasons, in every part of the Gulf and River St. Lawrence.

The fogs sometimes last several days in succession, and to a vessel either running up or beating down, during their continuance, there is no safe guide but the constant use of the deep-sea lead, with a chart containing correct soundings.

The fogs which accompany easterly gales, extend higher up into the atmosphere, and cannot be looked over from any part of the rigging of a ship. They, however, are not so thick as those which occur in calms after a strong wind, and which are frequently so dense as to conceal a vessel within hail; whilst the former often, but not always, admit the land, or other objects, to be distinguished at the distance of half a mile, or more, in the daytime.

The dense fogs which occur in calms, or even in very light winds, often extend only to small elevations above the sea; so that it sometimes happens, that when objects are hidden at the distance of fifty yards from the deck, they can be plainly seen by a person fifty or sixty feet up the rigging. In the months of October and November the fogs and rain that accompany easterly gales, are replaced by thick snow, which causes equal embarrassment to the navigator.

The prevailing winds, during the navigable season, are either directly up or directly down the estuary, following the course of the chains of high lands on either side of the great valley of the St. Lawrence. Thus a S.E. wind in the Gulf becomes E.S.E. between Anticosti and the south coast, E.N.E. above Point de Monts, and N.E. above Green Island. The westerly winds do not appear to be so much guided in direction by the high lands, excepting along the south coast, where we have observed a W.S.W. wind at the island of Bic becoming West, W.N.W., and N.W., as we ran down along the high and curved coast, until it became a N.N.W. wind at Cape Gaspé. These winds frequently blow strong for three or four days in succession; the westerly winds being almost always accompanied with fine, dry, clear, and sunny weather; the easterly winds as frequently the contrary, cold, wet, and foggy. In the spring, the easterly winds most prevail, frequently blowing for several weeks in succession. As the summer advances, the westerly winds become more frequent, and the S.W. wind may be said to be the prevailing wind in summer in all parts of the River and Gulf. Light south winds take place occasionally; but north winds are not common in summer, although they sometimes occur. Steady N.W. winds do not blow frequently before September, excepting for a few hours at a time, when they generally succeed easterly winds which have died away to a calm, forming the commencement of strong winds, and usually veering to the S.W. The N.W. wind is dry, with bright clear sky, flying clouds, and showers. After the autumnal equinox, winds to the northward of West become more common, and are then often strong steady winds of considerable duration. In the months of October and November the N.W.

wind frequently blows with great violence in heavy squalls, with passing showers of hail and snow, and attended with sharp frost.

Thunder-storms are not uncommon in July and August; they seldom last above an hour or two; but the wind proceeding from them is in general violent and sudden, particularly when near the mountainous part of the coast; sail should, therefore, be fully and quickly reduced on their approach.

Strong winds seldom veer quickly from one quarter of the compass to another directly or nearly contrary: in general they die away by degrees to a calm, and are succeeded by a wind in the opposite direction. I do not mean, however, by this observation, that they may not veer to the amount of several points. N.W. winds seldom or never veer round by North and N.E. to East and S.E.; but they do frequently, by degrees, to the S.W., after becoming moderate. S.W. winds seldom veer by the N.W. and North to the eastward, but sometimes by the South to S.E. and East. Easterly winds generally decrease to a calm, and are succeeded by wind from the opposite direction.

In the fine weather westerly winds of summer, a fresh topgallant breeze will often decrease to a light breeze or calm at night, and spring up again from the same quarter on the following morning: under these circumstances only may a land breeze off the north coast be looked for. I have observed the same off the south coast also, but not so decidedly or extending so far off shore. I have occasionally carried the north land wind nearly over to the south coast just before daylight, but have never observed the south land wind extend more than five or six miles off, and that very rarely. Under the same circumstances, that is, with a fine weather westerly wind going down with the sun, a S.W. land breeze will frequently be found blowing off the north coast of Anticosti at night and during the early part of the morning. If, however, the weather be not settled fair, and the wind does not fall with the sun, it will usually prove worse than useless to run a vessel close in shore at night in the hope of a breeze off the land. Such is the usual course of the winds in common seasons, in which a very heavy gale of wind will probably not be experienced from May to October, although close-reefed topsail breezes are usually common enough. Occasionally, however, there are years, the character of which is decidedly stormy. Gales of winds, of considerable strength, then follow each other in quick succession and from opposite quarters.

The marine barometer, which is at all times of great use to the navigator, becomes particularly so in such seasons; and the following remarks upon its general indications, when taken in connexion with the usual course of the winds and weather in the St. Lawrence, may therefore be useful. The barometer has a range from 29 to 30·5 inches in the Gulf and River St. Lawrence during the navigable season, and its changes accompany those of the winds and weather with a considerable degree of constancy. The fluctuations of the barometric column are much greater and more frequent there than in lower latitudes; and sudden alterations, which in other climates would be alarming, may occur there without being followed by any corresponding change either in the wind or the weather. But the navigator should not be inattentive to those minor changes, as a constant attention to the instrument can alone enable him to appreciate those decisive indications of the mercury which seldom or never prove deceptive. The following remarks will apply to those well-marked changes which usually indicate the approach of a gale of considerable strength, or of a shift of wind and weather; the correct anticipation of which is often of the utmost importance to the safety of a vessel, as well as to the length of her voyage. When after a continuance of westerly winds and fine weather, the barometer has risen nearly to its greatest height, say some tenths above thirty inches, or begins to fall a little, an easterly wind may be soon expected. If to this notice given by the barometer be added a warm hazy atmosphere during the day, and a heavy precipitation of dew at night, with very bright twinkling stars, or a coloured aurora borealis, the approach of an east wind is almost certain. If land be in sight at such a time, and appears much distorted by terrestrial refraction, or if vessels in sight have the relative proportions of their hulls and sails changed by the *mirage*, or present double or treble images, such appearances will render the more probable indications of the barometer certain. At the commencement, the easterly wind will probably be light with fine clear weather, but this will not last above a few hours if the

barometer continues to fall; on the contrary, the wind will gradually increase, and as it does so, the sky will be overcast by degrees until it is completely clouded. Both rain and fog will follow, and continue during the continuance of the easterly wind, with little intermission, until they are dissipated by a fresh breeze from the contrary quarter.

If the fall of the barometer, during the continuance of the easterly wind, be very slow, the gale will probably continue, and not be very violent: if rapid, it will probably be of short duration, and of greater strength: at any rate, when the mercury falls towards 29 inches, a change is certainly at hand, and the gale will in general come from the N.W. The strength of this succeeding gale will be in proportion to the fall of the barometer, and to the strength of the easterly gale which preceded it. In such a case, there is seldom many hours' interval between the one gale and the other. The east wind generally dies away to a calm, and in a very few hours, or sometimes in much less time, the N.W. gale springs up. A heavy cross sea remains for some time from the previous gale. The barometer sometimes begins to rise in the interval of calm which precedes the N.W. gale, at others at its commencement: the fog and rain cease, and the weather becomes quite clear, generally in a few hours, and sometimes almost immediately. The strength of the westerly gale is usually greatest soon after its commencement, and diminishes as the barometer rises, veering gradually to the Wes and S.W. It is worthy of remark, that the circumstances just mentioned are exactly the reverse of those attending the easterly gale. The gale usually commences with clear weather and a high barometer, light at first from the South or S.E., and gradually increasing as it veers to the eastward, with a falling barometer. To return to the westerly gale. If, after it has veered to S.W. and become moderate, the barometer remains steady at a moderate height, fine weather may be expected. If it remains at a considerable height, but still fluctuating and unsteady, within certain limits, variable but not heavy winds, and variable weather, may be expected. If, on the contrary, it rises quickly to a great height, a repetition of the easterly gale will not be improbable. We have experienced seasons in which the barometer may be said to have been no sooner blown up by one wind, than it has been blown down by another, and this stormy alternation to have continued for several months, whilst in others we have scarcely had a double-reefed topsail breeze during the whole summer.

There is in fact so great a difference in the phenomena of the weather in different seasons, that it becomes very difficult to write anything respecting it that shall not be liable to many exceptions. There are, however, some strongly marked cases of connexion between the indications of the barometer and changes of the winds and weather, which, within our own experience of eight or nine years, have been subject to few, I might almost say no exceptions. The first of these cases is that most common one, which I have endeavoured to describe, of an easterly gale, with a falling barometer, being always wet and foggy, and succeeded by a strong wind from the opposite quarter with a rising barometer. A second case, not of so frequent occurrence in common seasons, excepting in spring or early in summer, is the easterly wind with a rising barometer; which, although it may not be at first for a few hours, will almost always become fine and clear, and end in fine weather. A third case may be considered certain: if the barometer fall suddenly and greatly, at any time, a northerly, and most probably a N.W. gale, of great strength, may be confidently expected. It does not follow that it will be immediate, for it may be preceded by a strong gale from S.W., for a few hours, during which the barometer will seldom rise, and even, probably, continue to fall; but when the S.W. gale dies away, the northerly or N.W. will soon succeed, with a rising barometer.

In conclusion, I may remark that as, on the one hand, a considerable fall of the barometer may occur, without being followed by a strong wind; so, on the other, a breeze of considerable strength may come on without any indication from the barometer, but not anything that deserves the name of a gale. There has never, within our experience, occurred a gale, so heavy as to be of serious consequence to a good vessel, the approach of which has not been indicated by the barometer. But it must be remembered, that a high barometer, in this climate, and under the circumstances which I have mentioned, is often indicative of an easterly gale. It is remarkable that, in the gulf and estuary of the St. Lawrence, a high barometer may be considered as the forerunner of wet and foggy weather, which usually accompanies its fall; whilst a low barometer renders it equally probable that dry weather will ensue, since it often

accompanies its rise. I am fully of opinion, that the marine barometer is of the greatest assistance in the navigation of the Gulf and River St. Lawrence, and that by attending constantly to its state and changes, with reference to the winds and weather which preceded them, combined with the indications afforded by the appearance of the sky, &c., those changes of the wind and weather, which are about to take place, may be anticipated with a degree of certainty sufficient, in most cases, to enable us to avoid being caught on a lee-shore, or in an unsafe anchorage, as well as to regulate our course in a voyage, in anticipation of the coming change.

An opinion is prevalent that the compasses of vessels are disturbed in the Gulf and River St. Lawrence, and such disturbance has been attributed to the magnetic ores of iron in the hills, particularly those of the north coast. The magnetic oxide of iron does exist abundantly, and attracts the needle very powerfully at some points, particularly along the coast from the Bay of Seven Islands eastward. Among the Mingan Islands, we found the variation to vary from this cause from 19° to 31° W. At Port Neuf, and on Manicouagon Point, the needle was also disturbed. But these effects were only noticed when the instrument was placed on the shore. In two instances only, when sailing within two miles of the shore, have we observed any effect of the kind upon the compasses on board the *Gulnare* (the vessel in which the survey was made), and then only to the amount of a few degrees.

When running from place to place, at greater distances from the coast, nothing of the kind has been noticed; so that I feel sure, that in nine cases out of ten, where this source of erroneous reckoning has been alleged as the cause of accidents to vessels, they originated either in errors of the chart, or in the local attraction on board the vessels themselves."

CURRENTS, &c.—Admiral Bayfield, R.N., says—"It is a generally received opinion, that a current sets constantly to the south-eastward out of the Gulf of St. Lawrence, between Newfoundland and Cape Breton Island, and also that it is frequently deflected to the southward, towards the shores of the island last named, by another current from the northward, which is said to enter the Gulf by the Strait of Belle Isle.

I have myself observed that a current sets out, between Cape Ray and St. Paul Island, during westerly winds and in calm weather; but it is checked by easterly winds, and I believe that it may sometimes run in a contrary direction from the same cause. Northerly winds, and perhaps also the above-named current from the northward, may cause the stream to set to the southward towards Cape Breton Island. But the truth is that winds, both present and at a distance, possess so powerful and irregular an action upon the set and strength of the currents and tides in this entrance of the Gulf, that I can say nothing certain or definite respecting them.

The reality of a current inwards through the Strait of Belle Isle is confirmed by the presence of icebergs, which it transports into the Gulf every summer, against the prevailing S.W. winds; frequently carrying them as far as Mecattina, and sometimes even to the neighbourhood of the east point of Anticosti. Its strength is very much increased by a prevalence of N.E. winds: at such times it runs at the rate of 2 knots, through the Strait, and for 30 to 40 miles further to the westward; diminishing gradually in force as it spreads out in the wider parts of the Gulf. Usually, however, its rate is much less. At times, when S.W. winds prevail, it becomes very weak; and it has even been reported to me, that a current has been observed setting out of the Gulf, in a contrary direction to the N.E., for days together, but this was never observed by us during either of the three seasons which we passed there. There is, however, no doubt that this current is extremely irregular, as might be expected at the narrow outlet of a great inland sea, where winds, both within and without, must of necessity possess great influence.

After entering the Gulf, it runs along the north or Labrador Coast, at the distance of 2 or 3 miles from the outer islands; leaving a narrow space in-shore, in which the streams of the tides, when uninfluenced by winds, are tolerably regular. Passing outside of Mistanoque, the islands of Grand Mecattina, and the Southmakers Ledge, it pursues a direction given to it by the trending of the coast, till it is turned gradually to the southward, by the weak current which is often found coming from the westward between Anticosti and the north coast, during westerly winds, and which is set off to the southward from Natashquan Point. The united streams continue their southern course at a rate diminishing as they become more widely spread, and which seldom exceeds half a knot; and, finally, joining the main downward current out of the St.

Lawrence, of which an account will be given immediately, they all pursue a S.E. direction towards the main entrance of the Gulf, between Cape Ray and the Island of St. Paul. It is this current, from the northward, which is felt by vessels crossing from off the Bird Rocks towards Anticosti; and which, together with neglecting to allow for the local attraction of the compass, has been the principal cause of masters of vessels so often finding themselves, unexpectedly, on the south coast. Many shipwrecks have arisen from this cause near Cape Rosier, Gaspé, Mal Bay. &c.

Effect of the Tides on this Current.—Both these currents, viz., that from the northward, and the main downward current of the St. Lawrence, are modified by the tides, but in a way directly contrary: for the northern current, in through the Strait of Belle Isle, is accelerated by the flood, and checked by the ebb; whilst the other is accelerated by the ebb, and checked by the flood tide. These modifying causes, viz., the tides and winds, give rise to various combinations, and consequent irregularities, in the direction and strength of these streams, which it is extremely difficult at all times to estimate and allow for correctly.

Main Current of the River.—The current along the south coast appears to be superficial: at least we found it so in the lower parts of the Estuary, where observations upon the specific gravity of the water on the surface, and taken up from different depths, proved to us that the water of the St. Lawrence and its numerous tributary streams was widely diffused over the Estuary. It has also been observed that the current is strongest in spring, soon after the opening of the navigation, when the rivers are swelled by the recently dissolved snows of the winter. But, although, generally speaking, there seems no doubt that this current is the tribute of the St. Lawrence on its way to the ocean; yet, in the upper part of the Estuary it is not alone, and at all times, caused by the discharge of the St. Lawrence, but depends also upon peculiarities in the set of the tides. Thus, when our observations had confirmed the truth of the report, that the current always ran down on the south side of the Estuary from a few miles below Red Island towards the Island of Bic, we could not at first account for the fact; for it appeared impossible that this could be the comparatively fresh water of the St. Lawrence flowing on the surface towards the sea, when we knew that the whole body of water a few miles above, from shore to shore, on either side of Hare Island, and also in the Saguenay River, was running up during the flood tide. Attention, and numerous observations, together with an examination of the temperature and specific gravity of the water, informed us that this was an eddy flood, which is thus explained.

The flood tide ascends in a wide channel more than 100 fathoms deep: when it arrives at the comparatively narrow pass formed by Green Island, Red Islet Reef, and the extensive shoals off the entrance of the Saguenay River, it is obstructed thereby, as well as by the shoalness of the channel to the southward of Hare Island. There is not room for so great a volume of water to pass, and part of it is in consequence turned back, and forms an eddy flood, setting from below Red Islet Reef, towards the Razade Islets. During the ebb tide, the stream of the Saguenay sets over to the southward in the same direction, hence the current on that side is always down.

There is no upward stream of the tide (excepting so close in-shore as to be useless to ships) all along the south coast from Cape Gaspé to a few miles below Red Islet, in consequence of the union of this eddy flood with the main current of the river; and they have, therefore, so much influence on the navigation that I shall endeavour to trace their course more particularly.

Commencing from a short distance below the Red Islet Reef, the current is there very strong—about 4 knots. It decreases in velocity as it proceeds to the south-eastward, slanting over towards the Razade Islets; off which its rate is from 2 to 3 knots. It runs strongly along the northern edge of the Bank of Soundings off the south coast, upon which, especially in spring tides, a weak stream of flood will be found flowing in the opposite direction, and the boundary of the two streams is usually marked by a strong ripple. From Father Point to Cape Chatte, the rate of the downward current varies from a $\frac{1}{2}$ to 2 knots, according to the tide, direction of the wind, and season of the year.

During the ebb tide the stream runs down on both sides, stronger on the south than the north coast, and weakest in the middle of the Estuary. It is deflected, or turned off to the southward, by the Points Mille-Vaches, Bersimis, Manicouagan, and Point de Monts, and by the ebbing streams of the large rivers between them; a circum-

stance which should be carefully attended to by vessels coming up with a northerly wind; as they will infallibly be set over to the southward upon a lee shore, if they do not make the necessary allowance by keeping their wind well over to the northward.

During the flood tide this stream still continues to run down outside the Bank of Soundings off the south coast, although with diminished velocity, and is felt about half way over towards the north shore. In the middle of the Estuary there is usually slack water; whilst along the north coast the stream of flood is regular in its recurrence, increasing in force as we ascend the Estuary. The strength of the stream of flood is greatest in-shore, and diminishes as we proceed over to the southward, till at the distance of about 3 leagues it becomes insensible. These differences in the strength and direction of the streams produce strong ripples in various parts of the Estuary, but their position varies with the different times of tide, and perhaps from other causes, so that they cannot safely be trusted for any guidance to the seaman.

Round Point de Monts there is little or no stream of flood, excepting very close in-shore; the downward current is constant, or nearly so, off that point; and it requires a fast-sailing vessel to beat round it against a westerly wind. Point de Monts turns this current over to the S.S.E., at a rate varying from 1 to 2 knots; so that a vessel, having a west wind, and standing over to the southward on the starboard tack, will be carried towards the south coast at a rapid rate, having the current on her weather quarter; during her board tack to the northward she will be retarded, the current being then directly opposed to her course. When sailing at the rate of 4 knots, it will usually require only about half the time to go from near Point de Monts over to the south coast, that it will take to return from the latter to the former. This is a most important circumstance, which it is necessary to carefully guard against, when beating up the Estuary in this part during dark nights, and especially in foggy weather.

Below Point de Monts the current is no longer felt near the north coast, nor, indeed, anywhere to the northward of a line joining Point de Monts and Anticosti. It is confined to the neighbourhood of the south coast, which it follows in its curve to the southward, running strongly past Cape Gaspé, Flat Island, and Bonaventure Island; whence, curving gradually to the South and S.E., it continues its course towards the entrance of the Gulf, with a rate very much lessened in consequence of the great space over which it is now spread. The usual breadth of this stream from Magdalen River to Cape Gaspé is 3 or 4 leagues; but this, I believe, is not uniform. When S.W. winds prevail, it appears that this current, or a branch of it, is driven over from the vicinity of Magdalen River towards Anticosti; part of the stream running round the west point of that island, sets across nearly towards Large Island (one of the Mingans), whence turning gradually down outside the Mingan and Esquimaux Islands, and along the north coast, it sweeps round the curve to the westward of Natashquan Point and is turned off to the southward, as has been already mentioned. The other part sweeps round the large curve, or bay, between the west and S.W. points of Anticosti, and is turned off to the southward by the latter point, frequently causing a great ripple off it, which has been mistaken for breakers on a much more extensive reef than exists there.

I have noted the rate of this current, off different parts of the south coast between Capes Chatte and Gaspé, in the months of June, July, August, and September, and in different years, and scarcely ever found it the same. It varied between 1 and 2 knots in westerly winds. It was weaker, often nearly insensible, in easterly winds; and in one instance, off Mont Louis River, in a calm which was followed by a strong breeze from the eastward, it could not be perceived.

Vessels beating up the St. Lawrence against westerly winds usually experience little difficulty in making good way to windward, after having weathered the west point of Anticosti and arrived on the north coast: because there is seldom any current on that side, and the tides, although weak, are tolerably regular. It is in general very easy to beat from the Seven Islands to Point de Monts; for there the stream of flood is stronger than the ebb; the latter, as well as the current, being turned off to the southward by Point de Monts. There seems, at times, also to be an eddy current there, sweeping round the great bay or curve between the above-named points. It sets off from above Egg Islet to the S.S.W.; and is the probable cause why vessels, which shape a direct course for Point de Monts with a leading N.W. wind off the land at night, so often find themselves obliged to haul up for, or unable, to fetch the light."

ST. PAUL'S ISLAND, THE MAGDALEN ISLANDS, BRYON ISLAND, THE BIRD ISLETS, ANTICOSTI.

ST. PAUL'S ISLAND.—This island is nearly 3 miles long, and 1 mile broad. The bearing and distance from the south point of the island to Cape North are, W.S.W. ¼ W., 13 miles; and from the north point of the island to Cape Ray, the bearing and distance are, E. by N., 41½ miles. The margin is rocky and precipitous almost all round, indented by coves, in which shelter, during the prevalence of certain winds, may be obtained. A small detached islet forms its N.E. point, which is separated by a very narrow channel, from a peninsula, between 300 and 400 feet high, which, together with the isthmus, is so precipitous as to be nearly inaccessible.

Two octagonal-shaped white lighthouses are established on this island; one on the northern end, and the other on the southern point, one of which will always be open, unless to a vessel very near the central rocks. The northern light is fixed, and visible about 20 miles all round the compass, except on the bearings between N. by E. and E. by N., when it will be obscured by the hills to the southward of it. The southern light revolves once in every minute, at about the same elevation as the northern one (140 feet), and is also visible about 20 miles on all bearings, except those between West and S.S.E., when it is concealed by the land. At the southern lighthouse a bell is kept tolling in foggy weather, worked by machinery, and a gun fired every 4 hours, commencing at 4 A.M.

About a mile from the south point on the west side of the island, is Trinity Cove, at the northern part of which is a provision post; and on the opposite side of the island is Atlantic Cove: a landing may be effected in either of these. The cove on the N.W. affords a small and bold beach, about 150 feet long, where a landing may be effected, but generally with difficulty, by reason of the continual swell of the sea. The interior of the island rises into three hills, the highest being nearly in the centre, and terminating in a square summit of about 50 feet on each side, nearly perpendicular, and estimated to be about 500 feet above the level of the sea. The surface of the island is, in general, rocky, with some spots of marsh or bog, which probably supply the fresh water issuing from the rock. Stunted fir and white birch trees are the only products of the isle, but some drift wood may be picked up.

There is anchorage all round the island, and close in-shore, which circumstance enables vessels to lie there with any winds, by shifting their stations as the wind and weather require;—a mode practised by the privateers of the United States during the late war. There are tolerably regular soundings off the north side, at the distance of half or three-quarters of a mile; on the N.E. side a bank lies off about three-quarters of a mile, with from 7 to 8 fathoms of water. The general depth of the soundings around the island, at half a mile from the shore, is from 20 to 40, but the water soon deepens to 100 fathoms, so that there is little or no warning by the lead when approaching this island in foggy weather. There is a plentiful fishery of cod and mackerel around the coast, and also an abundance of seals.

MAGDALEN ISLANDS.—These islands form a chain, in an irregular curved direction, and lie between the parallels of 47° 12′ and 47° 39′ N. The Magdalens, when first made from sea, appear like several hilly islands, with channels between; but, on a nearer approach, they are seen to be all connected together, with the exception of Entry Island, by a double line of sand-bars and beaches, enclosing extensive lagoons, having very narrow entrances, by which the tide finds access and egress. In some parts these sand-bars are only a few feet above the sea, whilst in others they rise into hills of sand of considerable height. They appear to be increasing, since there are generally ridges of sand, with from 9 to 12 feet water, parallel to and from 50 to 100 fathoms outside the beach. Between these ridges and the shore there are 3 and 4 fathoms of water, a circumstance which has proved fatal to the crews of vessels wrecked upon these shores. The central parts of these islands attain an elevation of 200 to 580 feet. They contain a population of about 1100 inhabitants, whose principal dependence is upon the cod-fishery. Wood, for fuel, is scarce near the settlements, and large spars are not to be had. Small supplies of fresh provisions may be obtained, especially from Entry Island; and water may be had from Amherst Harbour. These islands possess no harbours for ships; but there are three fit for small vessels, named Amherst, House, and Grand Entry Harbours.

The names of the islands are Entry Island, Amherst, Grindstone, Alright, Wolf, Grosse, and Coffin Islands; exclusive of Bryon or Cross Island, and the Bird Islets, which lie more to the north.

AMHERST ISLAND.—The most southerly and principal island of the group is Amherst Island, which is connected with Grindstone Island by a double line of sand-bars, enclosing an extensive lagoon, 5 or 6 miles long, and from 1 to 3 wide, the southern part of which is named Basque Harbour: it has three outlets into Pleasant Bay; the southernmost is the deepest, but has only 3 feet at low water. To the east of this, and N.E. of the island, is Pleasant Bay, which is the best roadstead in the Magdalens, and the only one where vessels can venture to lie with all winds, during June, July, and August. The best anchorage is in 4 fathoms, with the rocky point of the entrance of Amherst Harbour bearing S.W. ½ W. two-thirds of a mile. Amherst Harbour is situated in the S.W. corner of Pleasant Bay; its entrance is very narrow and crooked, and over the bar is 7 feet least water.

The hills in the interior of Amherst Island rise to the height of 550 feet above the sea. Towards the S.E. part of the island, and about a mile to the N.W. of Amherst Harbour, is the very remarkable conical hill, named the Demoiselle, 280 feet high. At 7¾ miles, N.W. ½ W., from the western part of Amherst Island, is situated Deadman's Islet, which is about 3 cables in length, and 1¼ in breadth, and is about 170 feet high; a reef extends from it, about one-third of a mile, towards Amherst Island. At 7 miles N. 60° E. from Deadman's Islet, and 5½ miles W.N.W. from Gull Islet is a very dangerous reef, named the White Horse, which is small, only about a cable's length in diameter, and has but 10 feet water over it; on it the sea often breaks.

GRINDSTONE ISLAND.—This island is the next largest of the group, being, in respect of size, intermediate between Amherst and Alright Islands. Its highest point is elevated 550 feet above the sea at high water. On the west side of the island is a dangerous reef, with 18 feet least water, named the Pierre de Gros Cap, which is seldom seen, as the sea breaks upon it only in very heavy weather: it lies N.E. by E. ½ E., 6 miles from the White Horse; N.W. by W. from Hospital Cape; and 3⅜ miles from Cape la Trou, the nearest part of Grindstone Island; this reef, as well as White Horse Reef, may be cleared on the west side by not bringing Deadman's Islet to bear westward of S.W. ½ W.

ALRIGHT ISLAND.—This island lies to the eastward of Grindstone Island. Cape Alright is the southern point of the island, and is remarkable, the cliffs being of a greyish-white colour, with occasional brick-red low down, and 400 feet high. The south extremity of the cape is low, with a small rock close off it. To the N.W. of Cape Alright, about 2¾ miles, is the entrance to House Harbour; it is narrow and crooked, with only 6 fathoms water in it.

Alright Reef lies S. 80° E., 3¼ miles from Cape Alright, to the outer edge of the reef, which is 400 fathoms long by 300 wide; it is of white pointed rocks, having only 6 feet over them. To clear it on the S.W. side, keep the well-marked summit of Grindstone Island open to the south-westward of Cape Alright; and to clear the S.E. side of the reef, keep the east side of the woods of Wolf Island (seen over the bars) open to the eastward of Shag Island.

WOLF ISLAND.—From Grindstone Island the sand-beaches continue in a north-easterly direction, for 10 miles, to Wolf Island, which is about three-quarters of a mile long, with low sandstone cliffs; from Wolf Island the sand-beaches recommence and continue, with occasional sand-hills, 9 or 10 miles farther, to the North Cape in Grosse Island. A rocky shoal, of 3 fathoms, named the Wolf Rocks, lies about half a mile from the shore off Wolf Island, and 10 miles north-eastward of Hospital Cape.

GROSSE ISLAND.—The northern point of Grosse Island is the North Cape of the Magdalens, and is a precipice of considerable height. The North Cape Rocks lie to the westward of the cape, the outermost being about 600 fathoms from the shore. The sandy beaches and hills continue, from Grosse Island, curving to the eastward, 6 miles farther up to the East Point.

The East Point of the Magdalens is of low sand, enclosing several shallow ponds, and having several sand-hills, extending westward to the N.E. Cape. Off the East Point is the Long Spit, a ridge of sand, with from 2 to 3 fathoms of water, extending 1½ miles S.E. ½ S. from the point; and for 1¼ miles farther in the same direction the depth is from 4 to 6 fathoms. To clear this spit in 5 or 6 fathoms, take care not to

bring Old Harry Head, the N.E. point of Coffin Island, to bear to the southward of West. It is extremely dangerous, and there is a heavy breaking sea on it.

Doyle Reef lies S.E. ½ E. 6¾ miles from the East Point. The least water on it is 3 fathoms on one spot, and 12 to 13 fathoms all round it. It seldom shows, but is one of the worst dangers of the Magdalens. The only mark to clear it is the North Cape of the Magdalens open two-thirds of its breadth to the N.E. of the North-East Cape, which is a remarkable hill, 230 feet high, on East Island, which stands at the head of Grand Entry Harbour, and can be seen over all the sand-hills.

COFFIN ISLAND.—This island lies to the S.W. of East Point, and its N.E. point, named Old Harry Head, lies W.S.W. 4½ miles from it. The Columbine Shoals are a patch of rocks, with only 3 fathoms on them, lying S.S.W. ½ W., 2½ miles, from Old Harry Head. There are numerous small shoals and patches within them, towards Coffin Island, on some of which are only 3 feet. This is a dangerous part, and should not be approached at night, or during fogs.

The entrance of Grand Entry Harbour, situated at the S.W. end of Coffin Island, is extremely narrow, and ought not to be attempted without a pilot. The depth in this entrance is not more than 10 feet least water, and the harbour itself is extensive and well sheltered.

At 6 miles W.S.W. from the entrance of Grand Entry Harbour, is Shag Island, which is small and low, and out of the way of vessels.

ENTRY ISLAND.—At 7 miles S. ½ E. from Cape Alright, is the N.E. point of Entry Island, and the channel into Pleasant Bay lies between them, and also between Alright Reef and the Pearl Reef. The summit of Entry Island is 580 feet above the level of the sea, and is visible 8 or 9 leagues off, in clear weather. The red cliffs of this island are magnificent and beautiful, rising at the N.E. point to 350 feet, and at the south point to 400 feet. The S.W. cliffs of Amherst are also steep, but of less height; and as there is no land to the southward and westward, it cannot be mistaken.

The *Pearl Reef* is a small dangerous Reef of white-pointed rocks, having only 8 feet water over it. It bears E. by N., 4½ miles, from the N.E. part of Entry Island, and S.E. ¼ S., 8¼ miles from Cape Alright: even with a moderate swell the sea breaks heavily upon it. Demoiselle Hill kept more than half a point open to the northward of Entry Island, will clear it to the northward, and the same hill shut in with Entry Island clears it to the southward.

BRYON ISLAND.—This island is about 4 miles long in an E. by S. and W. by N. direction, and is only a mile broad. The north side is the highest, and on the south side are some coves, where boats may easily land with the wind off shore. Its eastern end bears from the East Point of the Magdalens N. by E. ½ E. 10½ miles, but its S.W. point approaches to within 8¾ miles of the North Cape of these Islands. A reef runs off from the S.W. end of the island 1½ mile; another from its east end ¾ of a mile to the N.E.; and there is a third running off to the southward from the S.W. point of the island, 1½ mile. Close to the eastward of the last of these reefs there is good anchorage, in 4 or 5 fathoms, or in 6 fathoms a mile from the shore. Small vessels often ride out heavy N.W. gales under this island, close to the reef. Between Bryon and Magdalen Islands the soundings are regular, from 9 to 11 fathoms, excepting a patch of foul and rocky ground with 5 fathoms upon it, lying between S.W. ½ W. and W.S.W. from the west end of Bryon Island. Although the soundings in approaching Bryon Island are regular, great care must be taken in approaching the reefs before mentioned, as they are very steep, especially the one running to the southward.

THE BIRD ISLETS* are small and not far apart: they are of moderate height, and flat and white at the top. In the passage between them there are rocks. The southernmost is the largest; from the east end of the N.W. Bird Rock there extends a ledge of rocks.

Nearly midway between Bryon and Bird Islands there is a rocky shoal, said to have only 4 fathoms on it in one part, but not less than 7 have been found on it. This, as well as the patch 3½ miles W.S.W. of Bryon Island, should be avoided by large ships in rough weather.

At 4 leagues to the eastward of the Bird Islands is the edge of the bank of sound-

* We believe it is intended to erect a lighthouse on one of these islets.

ings, on which are 55 fathoms. You should come no nearer the east side, in thick weather, than 40 fathoms.

ANTICOSTI.—The island of Anticosti lies at the entrance of the River St. Lawrence, and is about 40 leagues in length by 10 in breadth. It is of moderate height, being estimated to be nowhere more than 700 feet high, and is extremely barren, affording scarcely any support for the few quadrupeds which inhabit it. Although so destitute of sustenance, yet streams of fresh water may be found on every part of the coast, but generally too small even for boats. These streams become rapid immediately within their entrances; and even the largest of them, Observation River, to the westward of the S.W. Point, is barred with sand, excepting for short intervals of time after the spring freshets or heavy rains. There are no harbours or anchoring places suitable for large vessels. The only inhabitants are the people in charge of the lighthouses and provision posts, and at Fox Bay at the east end of the island.

Upon the island there are various provision posts established by the Government of Lower Canada for the relief of castaway crews, one of which is at Ellis Bay, 2 leagues S.E. from the west end of the island; the second at the lighthouse on the S.W. Point; a third at Jupiter River or Shallop Creek; and a fourth at Heath Point.

There have also been placed direction boards at different parts of the island, near the beach, to assist persons, who may have had the misfortune to be wrecked, in finding the provision posts above mentioned, which are nailed to trees with their branches cut off, to render the writing visible. They are, or were, placed as follows:—1st, on the west point of the island; 2nd, 4 leagues south-eastward of Ellis Bay; 3rd, 10 leagues westward of Jupiter River; and the 4th, 7 leagues eastward of Jupiter River.

Heath Point Lighthouse is of the same form and colour as that on the S.W. point of the island. It shows a bright fixed light from W.N.W. to N.E. by N., at 110 feet above the sea, and can be seen 15 miles in clear weather. This lighthouse must always be kept open southward of Cormorant Point.

EAST CAPE.—The East Cape, in lat. 49° 8′ 25″ N., and long. 61° 39′ 59″ W., is a perpendicular cliff, 100 feet high. To the southward of it, at the extremity of the low land, is Heath Point, with its lighthouse. This building at a distance appears like a sail, and is useful in marking the extent of low land to vessels either to the east or west of North. Between Heath Point and East Cape is Wreck Bay, in which there is no anchorage.

A dangerous reef runs off Heath Point about 2 miles in an E.S.E. direction; beyond which are 5 fathoms, increasing to 7 fathoms at the distance of 3 miles from the point. To avoid it, come not nearer to the east side of the point than 20 fathoms; to the south-westward of the point the shoal water only extends off three-quarters of a mile. A little farther to the westward is one of the best open anchorages on this side of the island, where you may anchor in 10 fathoms, with the lighthouse bearing E. by N., and Cormorant Point W.N.W., on a bottom of sand and mud, at nearly 2 miles from the shore.

During westerly winds it would be dangerous to approach too near the east side of Heath Point, for the winds coming along the land on each side of the island, sometimes do not meet until several miles to the eastward of the point. Between them you will be becalmed, and a strong current round the point might set you upon the reef.

About 6 miles W. by N. from Heath Point is Cormorant Point, beyond which, at the distance of 16½ miles, is South Point, off which a reef runs nearly 1½ miles, causing heavy breakers. To clear this reef at the distance of 2 miles, bring Heath and Cormorant Points in one bearing E. by S. South Point has a beacon 40 feet high upon it, situated in lat. 49° 3′ 43″ and long. 62° 18′ 30″ W.

From South Point to the lighthouse on the S.W. Point, the distance is 56 miles, and the intervening land has a similar appearance throughout. Between these points are the Jupiter River or Shallop Creek, Pavilion River, and Salt Lake River and Bay.

At Jupiter River, which lies 13 miles N.W. of South Point, are the houses of the provision establishment. Pavilion River lies 10 miles from Jupiter River, and its locality may readily be distinguished by the beacon erected near it; between, the coast is all low, but may be approached safely by the deep-sea lead, the reefs nowhere extending more than 1½ mile off. At nearly 21 miles to the north-westward of Pavilion River are Salt Lake River and Bay, whence to S.W. Point the coast is higher and bolder, and should be approached with caution in foggy weather. When

standing in-shore at night, do not bring the lighthouse to bear to the westward of N.N.W. Off the centre of Salt Lake Bay is indifferent anchorage in 7 fathoms, which must be very cautiously taken; six miles eastward of this bay there is a beacon, the latitude of which is 49° 17′ 30″, and the longitude 63° 20′ 30″ W.

S.W. POINT.—The S.W. Point Lighthouse is built on the extremity of the point. The tower is built of grey stone, of a conical form, 75 feet high, and shows a bright light, revolving every minute, which can be seen from N.N.W. round by west and south to S.E. by E. The lantern is 100 feet above the level of high water, and the light can be seen 15 miles from the deck, and 19½ miles when the eye is elevated 50 feet. To the lighthouse is attached a provision post, which forms a conspicuous landmark.

The S.W. Point is a low point, with a small cove on its north side, and has a reef running off it about half a mile towards the we' and south-west, 2 miles outside of which are 30 fathoms. In this cove vessels may anchor in 12 or 13 fathoms, sand and gravel, with the extremity of the point bearing S.S.W. ½ W., distant three-quarters of a mile, sheltered from N. by E. to S. by W.; but the anchorage is not recommended, being exposed to westerly winds, and the ground being indifferent. Hence to Ellis Bay the coast is lined by reefs extending out, in most parts, about a mile with 10 or 12 fathoms close to them; and there is no safe anchorage for vessels. In running down this shore the lead should be kept going.

About 5 miles to the northward of S.W. Point is Observation River, the largest stream on the island, having 5 or 6 feet water at the entrance, but barred with south-westerly gales. On the north side of the river are some high sandy cliffs, and 16 miles farther westward are some others, named the St. Mary's Cliffs, of less height and less remarkable, but not difficult to distinguish, as their situation is pointed out by a beacon, in lat. 49° 40′ 30″, and long. 63° 58′ W. Beyond St. Mary's Cliffs at the distance of 7 miles is a small stream, falling into a cove, named the Becscie River; this cove affords shelter for boats.

ELLIS BAY affords tolerably good anchorage. Its east point is named Cape Eagle, and its west point Cape Henry.

A reef of flat limestone runs off a mile south-westward from Cape Henry; and another reef runs off three-quarters of a mile to the westward from Cape Eagle; the entrance between them is 600 fathoms wide, from 3 fathoms on each side. Both the reefs show themselves by a line of breakers.

In approaching this bay from the westward, run down along the reefs off Cape Henry in 10 fathoms, until the west side of the White Cliff, which is on the east side of the bay, comes on with the east side of the westernmost of two hills, back in the country, bearing N.E. ¾ N., then haul up with these marks on, which will lead you into smooth water, close under Cape Henry Reef, in 3½ fathoms. Continue running on until Gamache House bears N. by E., then haul up for it, and anchor in 3 fathoms, muddy bottom, about half a mile from the flats at the head of the bay, and 300 fathoms from those on either side. Keep the lead constantly going.

In running for the bay from the eastward, with an easterly wind, keep along Cape Eagle Reef, in no less than 7 fathoms, till the east side of the White Cliff comes on with the east side of the same hill, as before; then haul up till the houses bear N. by E., and proceed as before. It is high water at Cape Henry, full and change, at 1h. 43m.; spring tides rise about 7 feet, neaps 4 feet.

Ellis Bay may be readily known by Cape Henry, which is a bluff point, and the land at the head of the bay being low causes the entrance to show distinctly. Two ridges of hills, back in the country, will help to distinguish it.

WEST POINT is low and wooded, with reefs extending not more than a mile from the shore. It may be safely rounded in 15 fathoms, at the distance of 1¾ mile. Between West Point and Ellis Bay, the shore is lined with reefs to the distance of 1¾ mile; it must not therefore be too closely approached.

West Point lighthouse consists of a circular stone tower 109 feet high, faced externally with fire-brick of a light colour, and the light, which is fixed, is shown at an altitude of 112 feet above the level of the sea, and may be seen in clear weather at a distance of 15 miles. Lat. 49° 52½′ N., long. 64° 32′ W. The light is exhibited from 20th March to 31st December. Signals are given by means of an air or fog whistle, sounded at short intervals during foggy weather and snow storms; or, by a nine-pounder gun fired every hour whenever the whistle is out of order.

The coast from West Point to North Point is low, with reefs running off about a mile, and should not be approached nearer than 25 fathoms. From North Point to High Cliff, the distance is 13 miles, with a moderately low and wooded shore. High Cliff may be easily known by being the only one on the island that has not its base washed by the sea.

White North Cliff lies 26 miles south-eastward of High Cliff; this part of the coast is dangerous, for at about one-third of the distance from High Cliff the reefs extend fully 2 miles from the land, and continue so for some distance. On approaching White North Cliff they only reach about half a mile from the shore. White North Cliff may be seen 6 or 7 leagues off, appearing like a white patch.

Carleton Point lies 10 miles south-eastward of White North Cliff; under this point vessels may anchor in fine weather, and procure wood and water.

About 10 miles south-eastward of Carleton Point is Cape Observation, a high, bold headland, under which vessels may anchor during westerly winds and fine weather, and obtain supplies of wood and water very conveniently. Farther eastward, at the distance of 12½ miles, is Bear Head, a similar headland to Cape Observation, and 400 feet high, which last-named cliff may be easily recognised, as there are no high cliffy headlands of equal height to the westward of it.

Between Bear Head and Cape Robert is Bear Bay, which is considered to be the best roadstead on this part of the coast of Anticosti, as the bottom is excellent, the depth moderate, and the shelter extends from N.N.W. round by west and south to S.E. by S. It is divided by two high cliffs into three bays, in each of which is a fine beach of sand and shingle and a fresh-water stream. The best anchorage is in 13 fathoms, with Tower Point (the southernmost of the cliffs) bearing N.W. ½ W., Cape Robert S.E. ½ S., and Bear Head N. by W. ¼ W.

To the south-eastward of Cape Robert, distant 19 miles, is Table Head, remarkable by its hill of a table form, immediately behind it; the coast between contains several small bays, but no anchorage. Four miles farther is Fox Head, much lower than Table Head, and to the southward of the head is the bay, affording good anchorage for small vessels during the summer months. The southern point of the bay is named Reef Point, and has a reef running off it fully 1½ mile, close off the end of which are 10 fathoms, so that to avoid it vessels should not approach nearer than 18 fathoms. The north point of the bay has also a reef running from it, fully half a mile. Winds from E. by N. to E.N.E. blow directly in.

Hence to East Cape the coast is cliffy and about 100 feet in height, but bold and free from danger. About half way is Cape Sand-Top, between which and East Cape vessels may anchor during westerly winds, in 16 to 20 fathoms, fine sand, at a mile from the shore.

THE NORTH COAST OF THE GULF.

CAPE WHITTLE TO THE MINGAN ISLANDS.

THE first bay to the westward of Cape Whittle is *Wolf Bay*, a place full of rocky ledges, but which, however, all show. On the west side of the bay is the island of the same name, of a greater height than the islands usually are off this part of the coast, being about 150 feet high, hence it is easily recognised; nearly a mile S.W. by S. from it is a small low islet (Outer Islet), and 1½ mile S.W. by S. from this,* at a spot where the depth has hitherto been considered 22 fathoms, lies the *Grange Rock*, with only 16 feet water over it; it is ½ a mile long, very narrow and steep-to.

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* This is the position assigned to it by Capt. Orlebar, R.N., but Capt. Grange, whose vessel, the *S.S. North American*, struck upon it in Sept., 1858, places it further out; he says, at that time, the "outer islets, Wolf Island, were fair abeam, 3 to 4 miles distant, and very nearly in line, bearing N.N.E. ½ E." It might, however, be, as Capt. Orlebar observes, "the whole of the coast is dangerous of approach, and the appearance of the land under different states of the atmosphere *very deceptive* as to *distance*.

Therefore, I would recommend no approaching nearer than sufficient to make out objects; and that, at least in thick weather, vessels should maintain 50 fathoms water in running along the land between Kegashka and South Breakers Ledge, for outside this depth there is no danger."

To the westward of Wolf Islet is *Coucoacho Bay*, affording the only anchorage for large vessels on this part of the coast, and which is represented to be easy of access, although the number of islets and rocks scattered about would convey a different impression. At the head of the bay is the Basin, an excellent harbour, and another harbour is formed by an arm running in an E. by N. direction, named the Tertiary Shell Bay, which is equally safe. Farther out than these harbours the bay is more than half a mile wide, and quite sufficiently sheltered for the safety of any vessel with good anchors and cables.

Outside the entrance of the bay are two small dangerous ledges, named the *South* and *South-west Breakers*, the first of which has only 12 feet on it, and shows only in heavy weather; it lies W.N.W. ½ W. 2 miles from the small low islet (Outer Islet) outside Wolf Island, and has, at ¾ of a mile S.W. from it, another small and steep shoal with 18 feet on it, which with the Grange Rock constitute the outermost dangers on this part of the coast. The South-west Breaker has but 3 feet on it, and bears N.W. ¾ N. 2¼ miles from the South Breaker, and West 2½ miles from the outermost of the Audubon Islets, on the west side of Coacoacho Bay.

The passage into the bay lies between these breakers, and in sailing in, the rule is, to leave Outer Islet and the rocks to the northward of it, 300 fathoms to the eastward, and when abreast of these rocks, a chain of low rocks, extending off to the south-west of Emery Island, will be seen right ahead. Bring the point of this chain to bear N.E. ¾ N., when it will appear on with the extreme point of the mainland, on the N.W. side, near the head of the bay, and run in on this mark, leaving some rocks, which lie 600 fathoms off the east side of Audubon Islets, to port, and then haul to the northward a little, so as to leave the Emery Rocks on the starboard. Their outer point bears N.N.E. ¼ E., 3 miles from Outer Islet, and when up to them, the bay is open before you, and clear of danger. The farther in, the better the ground, and the less the swell with S.W. winds, which are the only winds that send any swell into the bay. Tertiary Shell Bay is quite clear, excepting a small rock, one quarter of a mile within the entrance, which you must leave on the starboard hand; within it is perfectly land-locked, with from 5 to 11 fathoms muddy bottom.

To enter the Basin, you leave Tertiary Shell Bay, and the point of low rocks to the northward of it, to the east, and continue the course till within half a mile of the island, at the head of the bay. Then steer over to the eastward, towards that island, to avoid a shoal of boulder stones, extending 200 fathoms off the west side of the bay, leaving a deep channel between it and the island, 100 fathoms wide. Leave the island 50 fathoms to the eastward, and as you pass through, the water will deepen from 9 to 19 fathoms, and as soon as you are past the inner end of the island, haul to the N.W., into the mouth of a small bay, anchoring in 8 fathoms, over mud, and perfectly sheltered. On the east side of the entrance of the river, is a house occupied for fur-trading and salmon-fishing.

In running for the bay from the westward, you may either pass between the South-west and South Breakers, by bringing the inner or N.E. end of Wolf Island to bear E. ½ S., and steering for it; or by bringing Outer Islet to bear E.N.E., and running towards it, until you are within less than a mile, when you may haul in for the Emery Rocks, as before; in this latter course you will pass in between the Grange Rock and the 18-feet patch, lying ¾ of a mile south-west of South Breaker.

Thirteen miles westward of Coacoacho Bay is the River Olomanosheebo, Paint, or La Romaine, for each of these names it bears. It is very shoal, and has a trading post on its east side, and can scarcely be seen from the sea on account of the islets, but may be known by the low sandy cliffs, covered with spruce trees, on either side of the entrance. The coast to the eastward and westward is fronted with innumerable islets and rocks. When sailing westward, soon after leaving the river, you will see Treble Islet and Loon Rocks; the latter are 3 miles from the main and always visible, and are the outermost dangers on this part of the coast.

Wash-shecootai Bay, 10 miles west of Olomanosheebo, has off its entrance several small rocky ledges, making it very difficult of access. Three miles within Cloudberry Point, the western point of the bay, the bay contracts to a very narrow inlet, with several rocks and islets in it, and after proceeding about 8 miles you will reach a trading post of the Hudson Bay Company.

Musquarro River, another post of the Hudson Bay Company, 4½ miles westward

of Cloudberry Point, is situated 3 miles within the west point of a bay full of small islets and rocks, and becomes narrow and rapid just within the entrance. It will be known by the houses on the east side of the entrance, and also by a remarkable precipitous red ridge of granite, about 200 feet high, and 2 miles to the west of the river. It can be used only by boats and very small vessels.

KEGASHKA BAY. — About 4½ miles westward of Musquarro River is Curlew Point, having off it several low bare rocks and ledges, which are always visible; this point forms the eastern side of Kegashka Bay, a wild place, safe only in fine weather, and has a sandy bottom with bad holding ground. The western side of the bay is Kegashka Point, consisting of an island nearly joined to a rocky peninsula, and distinguished from all other islands on this coast, by being partly covered with spruce trees. A chain of small islets, wide apart from each other, afford very indifferent shelter from the prevailing southerly winds, and the heavy sea which they roll in upon the coast. The best berth is in the N.W. corner of the bay, where the vessel must be moored with an open hawse to the eastward, and have a third anchor on shore to the S.W., so as to be able to haul close in under the point, in the S.W. and southerly gales; her bows will then be within 15 or 20 fathoms of the rocks, and the spray of the sea, breaking on the point, will reach her bows.

To enter the bay, the best channel is between a small and low black islet, lying between Green Island (which is covere with grass, three-quarters of a mile eastward of Kegashka Point) and K gash'ka Point. This channel is 170 fathoms wide, and 8 deep, and is quite clear; the only direction necessary when coming from the westward, is to give the south extremity of Kegashka Point a berth of a quarter of a mile, or to go no nearer than 8 fathoms; then run along the east side of the point, which is quite bold, leaving all the islets on the starboard hand. Three-quarters of a mile on a N.E. ¼ N. course will bring you to the narrow channel between the westernmost islet and the inner end of Kegashka Point; haul round the point to the north-westward, at the distance of half a cable, and when within it, anchor as before stated.

In coming from the eastward, give Curlew Point a berth of half a mile, and run N.W. ¼ N. 3¼ miles, till the inner end of Kegashka Point bears North, and then proceed as before. It is high water on the days of full and change of the moon at 10¾h., with a rise at spring tides of 5 feet.

Three miles westward of Kegashka Bay is the river, which affords only shelter for boats. Within the entrance there is a fishing station.

NATASHQUAN POINT.—From Kegashka River the coast runs 15 miles westward to Natashquan Point, in nearly a straight line, and presents nothing remarkable, consisting principally of a sandy beach in front of sandy cliffs covered with spruce trees.

About half-way between Kegashka Bay, or 10 miles eastward of Natashquan Point, and 1¼ mile from the shore, lies a small and very dangerous 2-feet rock. (See note at foot of page 13.)

Two miles before reaching Natashquan Point is Mont Joli, a small eminence scarcely distinguishable. Captain Bayfield remarks that "Mont Joli has no existence, at least there is no mountain, nor even anything that deserves the name of a hill; but near the termination of the sandy cliffs, which end at the S.W. extremity of Natashquan Point, the sandy ridge, with spruce trees, rises into a slight mound, a very little higher than the rest of the country. This is Mont Joli; but so little remarkable in its appearance that we should not have noticed it, had it not been for its name."

The *Cod Banks* off this part of the coast are of sand, gravel, and broken shells, and have 24 to 40 fathoms on them. They are from 6 to 11 miles from the shore, with 50 fathoms between. There is a small cod bank, with 4½ fathoms least water, at 1½ mile S.W. from the S.W. end of Natashquan Point

On the west side of Natashquan Point is the river of the same name, having an entrance of about a mile in width. An island divides this entrance into two narrow channels, the northernmost of which is nearly dry, but the southernmost has 9 to 11 feet water at high tide. At the distance of half a mile from the island, on the south shore, there is a trading-post and fishery. Above this the river is navigable only for boats.

At the distance of 3½ miles from the river, is Little Natashquan Harbour, formed by a number of islets and rocks, and fit only for small vessels. The entrance to it is

between some islets on the east, lying near the mouth of the Little Natashquan stream, the westernmost of which is much the largest, and on the western side is a rather high and round-backed islet of grey granite, with a wooden cross on it. Off this islet a reef extends S.W. by S. rather more than half a mile. Between the two sides of the entrance is a central reef, part of which always shows, and which is bold-to, on its east and south sides; the other sides must have a berth in passing them. To enter the harbour, having arrived in 12 fathoms at half a mile distant from the harbour, and made out the islets at the entrance, bring the west point of the longer island on the east side to bear N.E. by N., and the islet with the cross on it will bear N. by E. ½ E.; and then steer for the latter, till abreast of the outer part of the reef to the westward, and then bear sufficiently to the eastward to pass on either side of the central reef, keeping clear of the shoal water of its north and north-east ends, and anchor in the centre of the harbour in 4 fathoms, with the rock of the central reef bearing S.S.W. ½ W., 180 fathoms off, and the cross N.W. by W. ½ W.

Five miles N.W. of Little Natashquan is Wushtawooka Bay, an intricate and dangerous place, full of small islets and shoals. Outside the bay is an islet or rock larger than the rest, named Shag Islet, which will help to distinguish it. Ten miles from Little Natashquan is Agwanus River, a stream difficult of access on account of the small rocks at the entrance; and 5 miles farther is Nabesippi River, only admitting boats in fine weather, with a trading station on its west bank.

Hence to the westward are Pashasheeboo, Mushkoniatawee, and Washatnagunashka Bays, which are full of rocks and too difficult of access for a stranger, although visited by the coasting vessels. Beyond these are the bays of Quetachoo-Manicouagon, Peashtebai, and Appeeletat, to which a similar observation may be applied.

A good mark to know this part of the coast is Watcheeshoo Point on the east side of Quetachoo-Manicouagon Bay, which is composed of granite, 127 feet high, and bare of trees; it is a peninsula, having the appearance of an islet, higher than the rest, when seen from a distance. It bears E.S.E., 14 miles, from St. Genevieve (one of the Mingan Islands), and N.W. by W., 18 miles, from Nabesippi. Inland, 6 miles from this, is the Saddle Hill, 374 feet high. Along the coast between the Natashquan and the Mingans, there are innumerable small and bare islets and rocks, but nowhere extending from the points of the main beyond 2½ miles. A vessel, therefore, ought not to approach nearer than 20 fathoms.

THE MINGAN ISLANDS are low, and estimated nowhere to attain an elevation exceeding 300 feet above the sea, being in general much lower. They possess very little soil, but nevertheless are thickly wooded with spruce, birch, and poplar, on the side towards the mainland; though, towards the sea, barren tracks often occur, composed either of bare limestone, or of banks and ridges of limestone gravel. Supplies of wood and water can readily be obtained from the principal islands, wild berries are abundant in their season, and so are different kinds of wild fowl. Quadrupeds are scarce, but there are plenty of seals upon the limestone reefs, and a few cod-fish off the coast.

The coast of the mainland proceeding from west to east, from St. John River to Mingan, is of sand and clay, low and thickly wooded, and with a fine sandy beach. Farther eastward the shore is sometimes of granite, and at others of limestone, the latter rock lying immediately over the former.

Mount St. John, 1416 feet high, is the highest point of the mainland in this neighbourhood. There are other hills, estimated at 1000 feet above the sea, about 6 leagues farther eastward, about 6 or 7 miles inland, and nearly opposite Quarry Island. With these exceptions the main is low, especially opposite the Eastern Islands, where the hills are far back in the country.

The tides among these islands never exceed a knot, excepting in very narrow channels. They are often rendered irregular by the winds, but in fine settled weather there is a constant alteration of the streams of flood and ebb between the islands and the main, and also within the distance of 2 or 3 miles from the southern shores of the islands.

None of these islands, of which there are 29, are inhabited; some of them are very small, and the largest does not exceed 11 or 12 miles in circumference. They are arranged parallel to the coast, and extend along it 45 miles from St. Genevieve Island, the easternmost, to the Perroquets, the westernmost.

Clear Water Point, which is 14 miles to the westward of St. Genevieve, projects out so as to interrupt the continuation of the chain of islands, and thus separates them into two divisions, the easternmost of which has been named the Esquimaux Islands, a name which should be confined to the island properly so called in the western division.

ST. GENEVIEVE, the easternmost of the Mingan Islands, is about 5 miles in circumference. Its N.E. point is a bluff headland, being the termination in that direction of the highest part of the island, which is about 200 feet above the sea, and slopes irregularly down to the southward.

Mount St. Genevieve is an isolated table hill on the mainland, of limestone, 332 feet above the level of high water, bearing N. ½ E., rather more than 2 miles from the N.E. point of the island of St. Genevieve. This mountain, and the high N.E. point of the island, distinctly point out to a vessel at sea the position of the channel between the island and the main. There are two patches of rock which render it necessary to approach the island of St. Genevieve with caution, viz., the Saints, and the Bowen Rocks.

The Saints are two low and bare rocks, lying about three-quarters of a mile to the south of St. Genevieve. There is a channel 5 fathoms deep, but with foul ground, between them and the island; and reefs under water extend from each of them fully 300 fathoms to the South, S.E., and S.W.

The N.W. Bowen Rock, with 3 feet least water, lies about 1¼ mile E.S.E. ½ E. from the eastern Saint, and with the south side of the latter on with the centre of the western Saint.

The S.E. Bowen Rock, with 6 feet least water, lies two-thirds of a mile S.E. ½ S. from the north-west Bowen Rock, and S.E. by E. ½ E., 1⅔ mile, from the eastern Saint, which is just open to the northward of the western Saint. These very dangerous rocks lie nearly in a line from the S.E. point of St. Genevieve, at the distance of 1⅓ and 2 miles, respectively. There is very deep water between and close to them, and also for rather more than a mile to the southward of them and the Saints. The soundings are here extremely irregular, varying from 4 and 6 fathoms rock to 43 fathoms sand, sometimes in a single cast of the lead. The whole of this dangerous part should be avoided by vessels.

HUNTING ISLAND, the next westward of St. Genevieve, is low, thickly wooded, and broken into many coves, fringed with small islets and rocks on all sides, excepting towards the mainland; it is about 11 miles in circumference. Its longest diameter is parallel to the coast, and about 4 miles. Off its S.W. point, and extending to the distance of 1⅓ mile, lie Wood and Gun Islands, leaving no passage between, and having reefs running out from them 300 fathoms to the southward. They are both low, and the latter is bare of trees, but covered with grass and peat, in which multitudes of puffins burrow and rear their young.

The Garde Rock, always above water, lies rather more than a mile off to the southward, from near the centre of Hunting Island; it would be highly imprudent for any ship to attempt a passage between it and the island, as there are many ledges scattered along the southern side of the island, and the Garde is itself the termination of a long ridge of sunken rocks. The south-eastern end of the island is likewise beset with several reefs, some of which extend three-quarters of a mile to the southward.

Collins Shoal, a small patch of rocks, with 12 feet least water, lies 2¾ miles South from the S.E. point of Hunting Island. The marks on this dangerous shoal are the east point of St. Genevieve just open to the eastward of the western Saint, bearing N. 38° E., and the north point of Wood Island on with the south side of the Garde Rock, bearing N.W. Between Collins Shoal and the reefs off the S.E. point of Hunting Island, the soundings are irregular, from 4 to 17 fathoms over rocky bottom, and vessels should not pass there, as in such a place it was impossible to be sure of having discovered every point of rock which may approach a few feet nearer the surface than the rest.

ST. GENEVIEVE AND BETCHEWUN HARBOURS.—The first is situated between the island of the same name and the mainland, and the second, between Hunting Island and the main. Both are excellent harbours, not difficult of access or egress, and fit for the largest ships. There are two channels leading to these harbours; namely, the East, and the Saints Channels.

To enter by the *East Channel*, with an easterly wind, observe the following direc-

tions:—Being at a distance from St. Genevieve Island, of not less than 3 miles, to be sure that you are further out than Bowen Rocks, bring the N.E. point of St. Genevieve in one with Indian Point (a low wooded point of the main, forming the east point of Pillage Bay), bearing N. 35° W. Run in with this mark on, and you will leave the Bowen Rocks half a mile to the westward, and will pass them in between 20 and 30 fathoms, over a bottom of fine sand and coral. When the S.E. point of St. Genevieve and the west Saint come in one, change your course a little to the northward, so as not to go too near a flat shoal, which extends nearly 300 fathoms from the east side of St. Genevieve. Give the N.E. point of St. Genevieve a berth of a cable's length, and passing as close to the shingly north point of that island as you please, bring up in 10 fathoms, mud bottom, half way between the latter and Anchor Island, which will be seen lying close within the N.W. point of St. Genevieve.

If you wish to proceed to Betchewun Harbour instead of anchoring at St. Genevieve, pass to the northward of Anchor Island, which is quite bold on that side, and you will see the entrance of Betchewun (between the north point of Hunting Island and Partridge Point) bearing W. by N. Mount Partridge, on the N.E. side of the point of the same name, will be easily recognised, being a wooded and steep-sided hill, similar to, but much lower and smaller than Mount St. Genevieve. The north point of Hunting Island is also a cliffy mound, with a cove on the east side of it. It is quite bold, and you must pass close to it, to avoid the Shoal off Partridge Point, which extends a full quarter of a mile to the southward, and diminishes the navigable breadth of the entrance to 350 fathoms. When in the entrance, you will see a low islet in the centre of the harbour; steer for it, and anchor with it bearing W. by N., and distant one-third of a mile. The depth of water in the harbour is from 9 to 18 fathoms, over mud bottom.

The distance across from the N.E. point of St. Genevieve to the main is about a mile, but the navigable breadth of the entrance is reduced to half a mile, by the rocks and shoal water off Ledge Point, which is composed of numerous rocks of granite close together. The shoal water extends from Ledge Point directly across Pillage Bay, to Partridge Point, and you must not approach these shoals nearer than 7 fathoms. This east channel is the best with easterly winds, and may be used with moderate westerly winds during the flood tide, by vessels not too large to work in such narrow channels, but they must be careful in their boards to the northward, especially in that towards Ledge Point.

Saints Channel.—To enter St. Genevieve and Betchewun Harbours by the Saints Channel, observe the following directions:—Bring the west points of St. Genevieve and Anchor Islands in one, bearing North, at a distance of not less than 5 miles from the former, to be sure that you are outside of Collins Shoal. Run in upon this leading mark, until the north sides of the two Saints come in one, bearing E.S.E. ½ E. The east sides of Mount Partridge and of Hunting Island (or rather of an island joined to it at low water) will come in one at the same time, bearing N.W. by N.; steer upon this last-named leading mark to avoid a reef which extends 280 fathoms from the S.W. point of St. Genevieve, until the east side of Mount St. Genevieve, seen over the sandy S.E. point of Anchor Island, comes in one with the N.W. point of St. Genevieve Island, bearing N.N.E. ½ E. Change your course now to North, which will take you in through the centre of the channel between St. Genevieve and Hunting Islands, and you may either proceed to St. Genevieve Harbour, round Anchor Island, giving its west end a berth of 2 cables' lengths, or to Betchewun Harbour along the N.E. side of Hunting Island, which is quite bold.

These directions for the Saints Channel will lead a ship in between the dangers off St. Genevieve and Hunting Islands, in not less than 20 fathoms water, and she will not have a less depth until she is in as far as Anchor Island. The breadth of the channel between the shoal water off the Saints, and the shoals off the S.E. point of Hunting Island, is a mile. It diminishes to half a mile between the reef off the S.W. point of St. Genevieve and the east end of Hunting Island, which is the narrowest part of the channel. Within this narrowest part, the ground becomes good for anchoring, as it is everywhere between St. Genevieve and Betchewun Harbours. Indeed, so little sea comes in, that the whole space may be considered as a harbour capable of holding a great number of vessels of the largest class.

Wood and water may be obtained, the latter from small streams, either on the main or on the islands.

There is an inner harbour at Betchewun, to the westward of the low islet which has been mentioned, but thence there is no channel, excepting for boats, to pass out to the westward between Hunting Island and the main.

The tides between St. Genevieve and Hunting Islands, and the mainland, are much influenced by the winds; but their rates seldom amount to a knot at any time, and are usually much less, excepting through the shallow and narrow channel at the west end of Betchewun Harbour, where there is at times a complete rapid.

CHARLES ISLAND, the next westward of Hunting Island, is 3 miles long, lies parallel to the coast, and 1½ mile wide. It is about 200 feet high, bold, and free from shoals; but at the distance of three-quarters of a mile South from its east point, there is a patch of rocky ground on which no less than 5 fathoms has been found, but which had better be avoided by large vessels.

The east point of Charles Island bears N.W. by W., nearly 2¼ miles, from the west point of Gun Island. The former of these points is quite bold, and so is the latter to the N.W.; but to the S.W. it has a reef extending 200 fathoms. Between them is the entrance to Puffin Bay, which is open to southerly winds. Within the east point of Charles Island and half-way towards a shoal cove in this island, there is good anchorage in 7 fathoms, mud bottom, at the distance of 2 cables from the island; but S.E. winds send in a considerable swell. In the N.E. corner of this bay is the narrow entrance (between shoals off Ragg Point and Hunting Island) to Ragg Bay, which has tolerable anchorage in its N.W. part, but has very deep water on the side towards Hunting Island, and is separated from the western part of Betchewun Harbour by the shoal and narrow channel for boats between the island and the main, before mentioned.

Charles Harbour, between the island and the main, though very narrow, is perfectly secure, and deep enough for vessels of any size, but its entrances are only 80 fathoms wide. Within, it expands to a quarter of a mile wide by three-quarters of a mile in length. Both entrances are 7 fathoms deep, but you must pass over 4 fathoms if you enter from the eastward through Puffin Bay. The depth within the harbour is from 4 to 6½ fathoms, with mud bottom.

Strong winds occasionally cause the tides to run at the rate of 2 knots in the entrances of the harbour, but in general there is only a weak stream with either tide.

To enter this harbour from Puffin Bay, bring the N.E. point of Charles Island, which is high and cliffy, to bear N.W., then steer for it, and give it a berth of 100 to 180 fathoms, as you haul round it to the westward into the harbour.

To enter from Trilobite Bay, give the N.W. point of Charles Island a berth of 60 to 140 fathoms, as you haul round it to S.E. by E. into the harbour. All the way from the eastern narrow entrance into Charles Harbour there is a broad zone of shoal water, which curves round parallel to the mainland till it joins Whale Island, and nearly fills up all the N.W. part of Trilobite Bay.

WHALE ISLAND, one quarter of a mile from the east side of Ammonite Point, and with shoal water between them, is distant 800 fathoms to the westward of Charles Island. Both islands are bold and cliffy, and Trilobite Bay is between them, with excellent anchorage, well sheltered from all but southerly winds. The only danger to be avoided when working into Trilobite Bay is a reef off Ammonite Point, which includes a small islet, and extends half a mile off-shore. The mark to clear this reef, when running along the coast, is to keep Gun Island open to the southward of Charles Island, and when hauling in from the westward, into Trilobite Bay, keep the north point of Charles Island well open to the southward of Whale Island.

Clear Water Point, about 2 miles westward of Ammonite Point, and 2½ miles westward of Whale Island, is low, with shoal water extending about a quarter of a mile from it to the southward.

The coast forms a large bay between Points Clear Water and Esquimaux, along which there are high and conspicuous cliffs of sand and clay, that distinguish this part of the coast to a vessel at sea. The shoal water extends a considerable distance from the shore all round this bay, and opposite Sea Cow Island the 3-fathom line of soundings is a mile out from the sandy beach.

Due West, and 1½ mile from Clear Water Point, lies a rocky 3-fathom shoal; and there are three others, with 2 fathoms, lying northward of the first, and in a

line from the point, towards Walrus Island: the outer or westernmost of them being rather more than 2 miles from the point.

The mark for the outermost of these shoals is the south side of the high land of Niapisca Island in one with the south point of Gull Island, bearing N.W. by W. ½ W.; or the north point of Fright Island, on with the south side of Esquimaux Island, and open to the southward of Green Island, bearing N.W. by W. The leading mark for passing outside these shoals, at the distance of half a mile, is the south points of Gull and Fright Islands in one, bearing N.W. by W.

WALRUS ISLAND lies 4 miles to the W.N.W. from Clear Water Point, and Sea Cow Island is close to the N.E. of it. The two islands together cover the space of 1½ mile, in a N.E. direction, and are steep and precipitous, excepting to the southward, in which direction the reef off Sea Cow Island extends three-quarters of a mile, and that off Walrus Island, 200 fathoms.

There is a clear channel to the westward of these islands, and also between them and the Clear Water Shoals. This latter channel is 1½ mile wide, and, although not the best, may be used in proceeding to Esquimaux Harbour from the eastward, by running upon the leading mark, which has been given for clearing the shoals to the westward of Clear Water Point, until the east sides of Esquimaux and Walrus Islands come in one. Then steer for the N.E. side of Sea Cow Island, and haul round it, at the distance of not less than 2 cables, to the north-westward for the east entrance of the harbour.

GREEN ISLAND, small, low, covered with grass, with reefs stretching north and south, 270 fathoms, but bold to the east and west, lies five-sixths of a mile W.N.W. from Walrus Island, and a third of a mile E.S.E. from Esquimaux Island.

GULL ISLAND lies a mile W. ½ S. from Green Island, which it resembles, excepting that it is rather smaller. It is distant half a mile from the S.E. point of Esquimaux Island, but there is no passage for ships between them. The south point of Gull Island is bold, and may safely be passed at the distance of 2 cables.

ESQUIMAUX ISLAND, 2¾ miles long, and 1¾ mile wide, is 200 or 250 feet high towards its north side, sloping to the southward. From its S.W. point a shoal extends towards Fright Island, which also has a shoal stretching towards Esquimaux Island. The channel between these, leading north-eastward towards Esquimaux Harbour, is 380 fathoms wide, with extremely deep water, but as there are no leading marks for it, and the reefs on either side are extremely dangerous, it cannot be recommended.

FRIGHT ISLAND is nearly a mile from the west point of Esquimaux Island, and about half a mile long, in a N.E. direction; it is bold on the south and S.W., on which sides vessels may pass at a cable's length, but reefs extend off it to the east, N.E., and N.W., to the distance of three cables.

QUIN ISLAND lies within, or N.E. by N. from Fright Island, from which it is distant a short half mile: it is nearly 1¼ mile long, in a N.N.E. direction, and its shores are bold, with the exception of a broad reef running out half a mile to the W.N.W. from its north point.

There is a deep channel of two cables' width, between Quin Island and the reefs off Fright Island, named the Fright Channel. This channel may be used with a westerly wind for proceeding to Esquimaux Harbour, by hauling up to the east of Niapisca till the south end of Quin Island comes in one with the south side of the cove in Esquimaux Islands, bearing E.S.E., then steering so as to pass close round the south point of Quin Island, which is quite bold, and thence E. by N., 2 miles to the entrance of the harbour.

But the best channel from the westward towards Esquimaux Harbour is Quin Channel; it lies between Quin Island and the main, which, at Point aux Morts, is distant two-thirds of a mile to the N.N.E. from the north point of the island. The shoal water extends only a cable's length to the northward from the latter, but off Point aux Morts, and also off the small islets which lie rather more than a third of a mile to the W.N.W. from it, the reefs extend 200 fathoms to the southward, and the shoal water is continuous to the eastward, across the mouth of the wide bay, which is to the northward of the harbour, and between Point aux Morts and Esquimaux Point. The depth of water in Quin Channel is from 5 to 7½ fathoms, with rocky, gravelly, or sandy bottom.

ESQUIMAUX HARBOUR lies between the north and N.E. points of the island of the

same name, and between that island and the mainland. The island is 400 fathoms from Esquimaux Point, which bounds the N.E. part of the harbour. Esquimaux Point, having the entrance of a small river on its west side, consists of sand, and is quite bold to the S.W., although shoals extend from it across the bays on either side, as has been mentioned. The north and N.E. points of Esquimaux Island are also bold, and may be passed at the distance of 70 fathoms by the largest ships. The depth within the harbour is from 5 to 15 fathoms, over a sandy bottom. The space in which vessels may anchor is nearly $1\frac{1}{2}$ mile long, in a N.W. $\frac{1}{2}$ W. direction, which is the bearing of the points of the island from each other, and the average breadth of the harbour 4 cables' lengths. There is therefore room for a great number of vessels, which, if they anchor well over towards the island (that is, within the line joining its north and N.E. points, and in not more than 11 fathoms water), will be sheltered from all winds. Supplies of good water may be procured from the river at Point Esquimaux, or from small streams on the island, and wood is plentiful.

Brief directions have been already given for Sea Cow, Fright, and Quin Channels, leading to this excellent harbour. For the best channels from the eastward and westward, observe the following directions:—

The best channel with easterly winds is the Walrus Channel, lying between Walrus and Green Islands. This channel is three-quarters of a mile wide, with 8 fathoms least water, and it is only necessary to give either island a berth of 200 fathoms to be clear of all dangers. Being 2 or 3 miles outside of these islands, bring the N.E. point of Esquimaux Island to appear about half-way between the two islands above mentioned as forming the channel, and it will bear about North. Steer for it, and giving it a berth of a cable's length, haul round it to the north-westward into the harbour, and anchor in the depth and position which has been recommended.

The best channel with westerly winds is to the westward of Fright and Quin Islands, between them and Niapisca Island, and then between Quin Island and the main. The extent and position of the reefs off Fright and Quin Islands have been already given. Niapisca Island, however, has reefs of flat limestone extending half a mile to the southward; and also a quarter of a mile to the eastward, from its S.E. and east points, between which a very remarkable group of flower-pot rocks will be seen standing on the limestone just above high-water mark. From its east point, which is the south point of a bay in the island, another reef runs out half a mile to the N.E. by E., but there is ample space between these reefs and Fright Island, the channel being over a mile wide in the narrowest part, and between 30 and 40 fathoms deep.

In running for this channel from the westward observe the following directions:— First, observe that the leading mark for clearing the south reef of Niapisca Island by more than 2 cables' lengths, is the N.W. point of Fright Island in one with the south end of Quin Island: do not therefore open those islands clear of each other, until you have brought Moniac Island (bearing N. $\frac{1}{2}$ E., $2\frac{1}{2}$ miles from the nearest point of Niapisca) in sight to the eastward of Niapisca. Having done so, haul in through the channel, steering N.N.E. $\frac{1}{2}$ E., and when you open Moutange Island (next westward of Moniac) to the northward of Niapisca, you will be clear of the N.E. by E. reef above mentioned. Haul up now, if necessary, to clear the reef, which projects half a mile W.N.W. from the north point of Quin Island, until you not only open the north point of Esquimaux Island to the northward of Quin Island, but also the north point of Sea Cow Island to the northward of Esquimaux Island. Run in between Quin Island and the main, with the last-named marks just open, bearing about S. 54° E., and they will lead you past the north point of Quin Island, at the distance of about 200 fathoms.

Take notice that the mark for the shoals off Point aux Morts, and the small islets westward of it, is the North and N.E. points of Esquimaux Island in one, bearing S.E. $\frac{1}{2}$ E.; if you open them before you are as far to the eastward as Quin Island you will be ashore. Having passed Quin Island, continue your course towards the north point of Esquimaux Island; and haul round it to the south-eastward into the Harbour.

The tides usually run at the rate of about one knot through Esquimaux Harbour, the flood coming round Clear Water Point from the eastward, and passing to the westward between Quin Island and the main. The ebb flows in the contrary direction. The flood also draws in between Fright and Niapisca Islands, and the ebb sets out through the same channel. But these streams are much influenced, both in their

rate and duration, by the winds, and the ebb is much accelerated by westerly winds in Esquimaux Harbour, running there at times fully 2 knots.

NIAPISCA ISLAND, the reefs of which have been already mentioned, is rather more than 2 miles long, from north to south; it is partly covered with wood, and has three principal hills, not exceeding 200 feet in height.

QUARRY ISLAND, nearly 2½ miles long, and about the same height as Niapisca, is separated from the latter by a channel 370 fathoms wide, with a small islet in it, but no safe passage for shipping, because of shoals in the bay to the southward, and of a reef which stretches beyond the small islet. Other reefs also run out one-third of a mile from the west side of Niapisca, and from the south side of Quarry Island.

Quarry Cove is on the north side, and two-thirds of a mile to the north-westward of the east end of the island. It is 230 fathoms wide, and about 400 deep, with 22 fathoms of water in the entrance, shoaling gradually to 4 fathoms, with mud bottom close to its head. The islands and shoals along the mainland are distant only 3 miles to the northward of this cove, which thus becomes a completely land-locked, though very small harbour. No other directions are requisite, than keeping the west side nearest on board in entering, and to anchor near the centre in 9 or 10 fathoms. Good water may be obtained from a small stream in the S.W. corner of the cove.

There is a clear channel, named Quarry Channel, between Quarry Island and Large Island, which is the next westward. This channel is 400 fathoms wide from island to island, in the narrowest part, where the shoal water off Large Island diminishes the navigable breadth to 330 fathoms. The only directions necessary are to bring the channel to bear N.N.E.; then run in, keeping in its centre until two-thirds of a mile within the S.W. point of Quarry Island, after which you may keep that island close on board, as the remainder of the channel, 1¼ mile, is quite bold on that side, while the shoal water extends 150 fathoms from Large Island. The flood runs slowly in through this channel, and the ebb as slowly out.

LARGE ISLAND is of an oval shape, the longest diameter from north to south being 4 miles; it is rather more than 11 miles in circumference, thickly wooded, and in its highest part estimated at 200 feet above the sea. Reefs of flat limestone extend off its south and S.W. points to the distance of nearly three-quarters of a mile, and the mark for the south point of these reefs, in 2 fathoms, is the south points of Niapisca and Fright Islands in one. On its west side, a mile to the northward of its S.W. point, there are many flower-pot and arched rocks, standing on the flat limestone above the present high-water mark.

The Middle Reef lies just within the line joining the south points of Large and Mingan Islands, and 2 miles westward of the former. A part of this reef is always above water, but it is not 30 fathoms in diameter, though the shoal around it is half a mile long in a N.E. by N. direction, and one-third of a mile wide. The mark for the east side of this reef, in 4 fathoms, is the east sides of the two Birch Islands in one.

The navigable passage between this reef and Large Island, named the Large Channel, is 1⅔ mile wide, and has a depth of 54 fathoms. This is the channel that should be used by a vessel proceeding to Mingan Harbour with an easterly wind, and in doing so the only thing necessary to be observed is, that the reefs extend to the westward off the shore of Large Island, from 3 to 2 cables' lengths, as far in as the Flower-pot Columns, after which the island becomes bold. There is little or no warning by the lead on the Large Island side, but the Middle Reef may be approached to 13 fathoms, which on the east side is more than half a mile from it. Farther in, the Birch Islands form the west side of this channel, at the distance of nearly 2 miles from Large Island; the east side of the Outer Birch is quite bold, and the shoal water extends only 150 fathoms off the east end of the Inner Birch Island.

The OUTER AND INNER BIRCH ISLANDS lie to the northward of the Middle Reef, and in a line from it towards the west side of Harbour Island. The channel between the Outer Birch Island and the Middle Reef is almost a mile wide and 30 fathoms deep, and the shoal water extends only 150 fathoms from the south point of the former. But there is a very dangerous reef off the west side of the Outer Birch Island, extending 650 fathoms from the shore. The channel between the two Birch Islands is 300 fathoms wide, but the ground is all foul, and not more than 3½ fathoms could be carried through by a stranger. The Outer Birch Island is about a mile in diameter, and about 300 feet in height, and it has a remarkable flower-pot

rock on its S.W. point. The Inner Birch Island is rather larger; its N.W. point is long and low, extending half a mile westward from the body of the island, with a curve to the S.W.; off this point there is a reef running out half a mile westward, and having 12 fathoms within a cable's length of its edge.

Half a mile S.W. of the same point, there is a small low islet, close to the south point of which stands a very remarkable rock, named the Hulk Rock, from its resemblance to the hulk of a wrecked vessel. The reef of flat limestone, dry at low water, which connects this islet and rock to the low west point of the Inner Birch Island, extends 300 fathoms off the rock to the S.W., and also 200 fathoms to the westward. The flood tide sets out to the S.W. between the Birch Islands, and also between them and the Middle Reef.

Between the Birch Islands and Mingan Island is Birch Channel, which is the best by which to proceed to Mingan Harbour with westerly winds. It is 3 miles wide, and all deep water.

MINGAN ISLAND, 3¼ miles westward of the Inner Birch Island, is nearly 2 miles long, in a N.N.E. direction; and, including two small islets close to its west side, nearly a mile broad. It is about 100 feet in height, and bare of trees. The shoal water does not extend above 300 fathoms off its south point; but to the S.W. and west the reefs, including the islets, run out nearly 600 fathoms. The island is bold on its north and east sides.

To the S.W. ½ S., 3¼ miles from the south point of Mingan Island, and with the south point of the Outer Birch on with the north point of Large Island, lies the Mingan Patch, which consists of rocky ground of 9 fathoms least water, yet there is a very heavy swell on it at times. There are 22 fathoms of water between it and the island.

The PERROQUETS, the westernmost of the Mingan Islands, are four small islets, low, and bare of trees. The north-westernmost is higher than the others, surrounded with cliffs, and has a superstratum of peat on its flat summit, in which great numbers of puffins burrow and rear their young. The two easternmost of these islets are distant 2 miles N.W. by W. from the centre of Mingan Island, and have a reef of flat limestone extending off them three-quarters of a mile to the S.S.W. There is also a shoal northward of them one-third of a mile, and a narrow channel between them and the other two, but of no use to vessels. The north-westernmost islet has shoal water off it to the distance of a quarter of a mile, both to the eastward and westward, but a vessel may pass to the northward of it, at the distance of 200 fathoms, in 14 or 15 fathoms of water. The Perroquet Channel, between these islets and Mingan Island, is 1½ mile wide, and has a depth in mid-channel, varying from 30 to 40 fathoms. Both the flood and ebb set out through the channel, the former to the S.W., and the latter to the southward.

All the islands above described, from Niapisca Island to the Perroquets, inclusive, are bold, and free from danger on their north sides, so that Mingan Channel, which lies between them and the main, is safe throughout. Moniac Island, lying on the mainland side of this channel, is less than half a mile in diameter, and stands nearly opposite Niapisca Island, from which it is distant about 2½ miles.

MOUTANGE ISLAND, 1½ mile westward of Moniac, is about 1¼ mile in diameter, and situated off a bay full of little islets, and in which there are several small rivers. Moutange is directly opposite Quarry Island, at the distance of 2¼ miles. These islands, Moniac and Moutange, are distant three-quarters of a mile from the nearest point of the main, but the shoals within and between them are nearly dry at low water.

The shoals do not project above 3 cables' lengths off to the southward of Moniac and Moutange Islands, but there is rocky ground, with irregular soundings between 4 and 10 fathoms, out to the distance of a mile to the southward of them both; so that a vessel beating in the Mingan Channel had better not stand over to the northward beyond 1¼ mile from the northern shores of the outer islands, or into less than 10 fathoms.

Sand Lark Reef, 3¼ miles N.W. by W. of Moutange Island, 2½ miles E.S.E. from Mingan Harbour Island, and rather more than a mile from the mainland, is small and low, but always above water. The shoal water does not extend off it above a cable's length, and there is a clear channel with deep water on all sides of it; but there is a rocky patch, with 5 fathoms of water, 1½ mile from it, on a line towards the south

side of Moutange Island. This shoal water has not been closely examined, and should therefore be avoided.

Between the Inner Birch Island and Harbour Island, the Mingan Channel is 1⅜ mile wide, with rocky and irregular soundings between 7 and 20 fathoms. The deepest water is over towards Birch Island, where the bottom is generally of sand, gravel, and shells.

Between the Perroquets and Long Point, and also between Mingan Island and the latter, the Mingan Channel is 2¼ miles wide, and free from all danger, excepting a sandy shoal extending off the shore, immediately westward of Long Point, to within a mile of the Perroquets. There is often a great ripple off this shoal, caused by the flood tide being turned off by Long Point toward the S.W. This channel may be conveniently used, in going to Mingan Harbour with a northerly wind.

Long Point consists of sand, and there is a fine beach thence to the eastward, as far as Mingan Harbour, inclusive.

Mingan Harbour is the narrow but well-sheltered space between Harbour Island and the mainland; the latter is low, and has a fine sandy beach, while the island is of limestone, about 100 feet in height, thickly-wooded, precipitous and bold towards the harbour, but shelving and shoal to the southward to the distance of a quarter of a mile from the shore. The length of the island is 2 miles, and its greatest breadth does not amount to half a mile.

The reefs off the east and west ends of the island, and which are the principal things to guard against in entering the harbour, extend 240 fathoms out from the high-water mark.

The mainland recedes from the island in the eastern part of the harbour, which would, in consequence, be exposed to easterly winds, if it were not for a sandy shoal, dry at low water, which extends 700 fathoms out from the entrance of the Mingan River. This river is only capable of admitting boats at high water, and its mouth is opposite the east end of the island. The eastern entrance of the harbour, between the above sandy shoal and the island, is 200 fathoms wide; the western entrance between the mainland and the island is 170 fathoms wide; the whole breadth in both entrances being in deep water. The space within, in which vessels may anchor in safety, is about a mile long by 270 fathoms wide, with plenty of water for the largest ships, over a bottom of fine sand.

Although these entrances are so narrow, there is little difficulty in taking a vessel in of the size of a sloop of war, and large frigates have occasionally visited the harbour.

To enter Mingan Harbour, observe the following directions:—In approaching it from the eastward, bring the north or inner side of Harbour Island to bear N.W., and the houses of the Hudson Bay Company's post ought then to appear open fully their own breadth to the northward of the island. Steer for those houses so open, leaving the east end of the island 150 fathoms to the southward, or on your left, and taking care to keep the south side of the sandy point of the main, which forms the western entrance of the harbour, shut in behind the north side of the island; for when they are in one, you will be on shore on the sandy shoal off Mingan River. After you have passed the east end of the island, run along its north side at the distance of a cable, and choose your berth anywhere near the centre of the harbour, in from 9 to 13 fathoms, sandy bottom.

When running for the harbour from the westward, run in towards the sandy beach of the mainland at the distance of three-quarters of a mile westward of the island, until the sandy point of the mainland, which forms the west end of the harbour, comes in one with the face of the clay cliffs, to the eastward of the Hudson Bay Company's houses, bearing E. by S., or until you are in 11 fathoms water. Run upon this mark, or course, along the beach, and give the above sandy point of the mainland a berth of half a cable, as you pass into the harbour, and choose your berth as before directed.

Mingan Harbour is perfectly secure in all winds, and, like Esquimaux Harbour, it has this great advantage, that vessels can enter or leave it either with easterly or westerly winds.

From Long Point, a broad beach of fine sand reaches to the River St. John; outside of which shoal water extends to the distance of three-quarters of a mile.

THE WEST AND SOUTH COASTS OF THE GULF.

CAPE GASPÉ TO POINT ESCUMINAC.

CAPE GASPÉ is a remarkable headland, of limestone, having on its N.E. side a range of cliffs, which rise from the sea to the height of 692 feet. Off the south-east extremity of the cape there was till recently a very remarkable white rock, named the Flower-pot Rock, Ship's Head, or Old Woman. The base of this rock had been worn so much by the action of the sea, as at last to cause its fall into deep water.

Off Cape Gaspé there are several rocky patches, frequented by the fishermen. They all lie in the same direction from Flower-pot Rock, S.S.E. ½ E. The first is a small patch with 8 fathoms least water, the second has 16 fathoms, and the third 10 fathoms. Their distances from the rock are seven-eighths, 1½, and 13 miles respectively. There is deep water and irregular soundings between them, and the last-mentioned is on the bank of soundings lying off this coast.

At the distance of 7¾ miles, S.S.W. ¼ W. from Cape Gaspé, is situated Point Peter, forming the N.E. point of Mal Bay, and the south point of Gaspé Bay. It is of low sand-stone, and thickly covered with the white houses of the fishermen.

Flat Island lies about 400 fathoms off Point Peter, and is small, low, and of sand-stone. Between the island and the point there is a clear channel, but no good anchorage: for although vessels occasionally anchor to the northward of the island, yet the ground is so foul, that there is great danger of losing an anchor from its hooking the rocks. From Flat Island to Cape Gaspé, across the mouth of Gaspé Bay, the course is N.N.E. 7¼ miles.

GASPÉ BAY possesses advantages which may hereafter render it one of the most important places, in a maritime point of view, in these seas. It contains an excellent outer roadstead, off Douglas Town; a harbour at its head, capable of holding a numerous fleet in perfect safety; and a basin where the largest ships might be hove down and refitted. The course up the bay, from Flat Island to the end of Sandy-beach Point, which forms the harbour, is N. by W. ½ W. rather more than 16 miles. From Point Peter the land rises in undulations to the chain of mountains about 5 miles inland from the south-western shore of the bay. The south-western shore of Gaspé Bay, from Point Peter to Douglas Town, a distance of 12 miles, presents a succession of precipitous headlands. Shoal water extends nearly a third of a mile from the cliffs, and vessels beating should beware of this, since the water shoals too rapidly to allow of much warning by the lead.

In the N.E. side of the bay there is an anchorage, with good holding ground, but in not less than 17 fathoms, except within a quarter of a mile of the shore, abreast of St. George Cove, Grand Grêve, and Little Gaspé. This side is bold, and free from danger in every part with the exception of the Seal Rocks, which are the only detached dangers in the bay.

The Seal Rocks are 6¾ miles within Cape Gaspé, one mile S.E. by S. from Cape Brulé, and half a mile off-shore. The length of this reef, from 3 fathoms to 3 fathoms, and in a direction parallel to the shore, is half a mile; and its breadth a quarter of a mile. The least water is 4 feet, and there are 3 to 3½ fathoms between it and the shore. When on the outer edge of the Seal Rocks, Cape Brulé is in one with the next cliffy point up the bay, bearing N. 35° W. by compass, and this only mark is sufficient for the safety of vessels beating, for the rocks are out of the way with fair winds.

Douglas Town is a village of fishermen and farmers, standing on the rising ground at the south side of the entrance of the River St. John. The roadstead of the town is extensive, and vessels may anchor in any part of it, and in any depth from 11 to 6 fathoms, over sand and clay bottom; although the best berth is in 7 fathoms, with the entrance of the River St. John bearing N.W. by W. 1¼ mile. The course and distance from Cape Gaspé to this anchorage is N.W. by W. 7¾ miles. There is, however, no shelter from winds between S.E. by E. and S.S.E., which blow directly into the bay, and roll in a heavy swell. The riding is, nevertheless, much less heavy on such occasions than might be expected; and, as the ground is excellent for holding,

a vessel may safely anchor here during the summer months. Water may be obtained by ascending the River St. John to the islands, a distance of 2 miles. In the spring of the year, there are often 9 feet of water in the entrance of this river, which is between two points of sand; and there are 12 feet of water in the narrow channel for some distance within. At the islands the river becomes shallow and rapid. Two miles northward of Douglas is Cape Haldimand, a bluff point of cliff, and the south-eastern termination of the range of hills which separates the harbour, basin, and S.W. arm, from the valley of the river St. John.

GASPÉ HARBOUR.*—From the N.E. side of Cape Haldimand, Sandy-beach Point runs out to the northward, and forms the Harbour of Gaspé. It is a very low and narrow point of sand, convex to seaward, on which side the water deepens gradually from high-water mark to the depth of 3 fathoms, a distance of nearly half a mile: on the inside it is as bold as a wall. Thus this spit, apparently so fragile, becomes a natural dam or breakwater, upon which the heavy swell, which often rolls into the bay, can produce no effect, expending its strength in the shoal water before reaching the beach. The water deepens immediately outside of 3 fathoms, all along the outside of Sandy-beach Point, and also off its north extremity; so that it is both dangerous and difficult to beat in or out of the harbour at night; the lead giving little or no warning.

To the northward of Sandy-beach Point, at the distance of nearly a mile, is a low sandy peninsula, covered with spruce-trees, and with several whale-sheds near its west point. Between the shoal water in the bay to the south-eastward of the peninsula, and that which extends from the extremity of Sandy-beach Point, is the narrowest part of the entrance to the harbour, which is 420 fathoms wide and upwards of 11 fathoms deep in mid-channel.

To run into the Harbour of Gaspé, attend to the following directions and remarks:—On the N.E. side of the N.W. arm there is a wooded point with low clay cliff, $2\frac{3}{4}$ miles above the peninsula. This point appears as if it were the extreme on that side, when seen over the end of the peninsula from a vessel approaching the entrance of the harbour, and is named Point Panard. Now this point (seen over the peninsula) in one with the inner or north side of the whale-sheds before-mentioned, is the mark for the northern extreme of the shoal off Sandy-beach Point. The extremity of the spruce-trees is as far within the whale-sheds as these last are from the sandy extremity of the peninsula. On the inner side of Sandy-beach Point, and near to its junction with the mainland, stands a wooden windmill. Keep Point Panard in one with that extremity of the spruce-trees on the peninsula, bearing N. 47° W., until the windmill, just mentioned, comes in one with the west or inner side of the end of Sandy-beach Point, bearing S. $\frac{1}{2}$ W., when you may haul into the anchorage under the point, or steer for the basin. When beating in, tack by the lead from the N.E. side of the bay, and in the board towards Sandy-beach Point, put the helm down the instant the marks for leading in, just given, come in one.

At night, when neither Sandy-beach Point nor the peninsula can be seen, it becomes rather a difficult affair to take a vessel into the harbour. The only guide then is the lead: soundings should be first struck on the N.E. side of the bay, about two miles outside of the entrance of the harbour, and the edge of the shoal water on that side should be followed, in from 5 to 7 fathoms, until you judge, by the distance run, and the change which takes place in the direction of the edge of the bank which you are running upon, that you are approaching the peninsula and have passed Sandy-beach Point, and can in consequence venture to haul to the southward into the anchorage. To form this judgment accurately is the difficult part of the process, and as a failure in this would probably cause the loss of the vessel, if the usual heavy swell should be rolling into the bay with S.E. winds, Admiral Bayfield recommends a vessel rather to trust to her anchors off Douglas Town than to make the attempt. In the case of a vessel losing her anchors, the directions which have been given may prove of use. Within Sandy-beach Point, the shelter is complete from all winds; the bottom is mud, and the depth nowhere exceeds $11\frac{1}{2}$ fathoms.

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* This is now, we believe, a free port; and we are also informed that the inland navigation, *vid* the St. Lawrence and the lakes, has likewise been declared free of charges.

Admiral Bayfield says:—"There are regular but weak streams of flood and ebb in the entrances of the harbour and basin. In the bay the streams of the tides are irregular, and are usually almost imperceptible, excepting near the shores, and even there they are so weak as to be of little or no consequence to a vessel.

The current down the St. Lawrence runs strongly past Flower-pot Rock over towards Flat Island, especially in the ebb tide, which often increases its rate to two knots, and this should be remembered by vessels making the bay with a northerly wind. This current, when it meets the swell which so often prevails from the south and S.E., causes a high, short, and breaking sea, all along the coast from above Cape Rozier to Cape Gaspé, and extending across the entrance of Gaspé Bay. When the wind is light, a vessel becomes quite unmanageable in this sea, and it is extremely dangerous to be caught in it, close to the shore, by a light breeze on the land.

In fine summer weather there is often a sea-breeze blowing right up the bay from about 9 A.M. until sunset. At such times there is generally a light land-breeze at night down the arms, which often extends for several miles out into the bay. In the outer part of the bay, however, it will generally be found to be calm, even at times when a fresh breeze is blowing outside Cape Gaspé and Point Peter The wind at sea on such occasions is generally from the S.W."

MAL BAY.—Point Peter, as before mentioned, is the N.E. point of Mal Bay. This bay is between 5 and 6 miles wide, by 4 miles deep, and entirely open to the S.E. A fine broad sandy beach extends right across the head of the bay and encloses a shallow lagoon, into which a considerable river and several small streams discharge their waters; this lagoon has an outlet, named the Tickle, in the N.W. corner of the bay, admitting boats at high water and in fine weather. There is anchorage all round the shores of Mal Bay, but as a heavy sea and thick fog often precedes a S.E. gale, and render it difficult for a vessel to beat out, it cannot be recommended. There is an open cove or small bay on the N.E. side, in which a vessel can be occasionally moored close to the shore, and in 3 fathoms water.

From Point Peter to Cape Despair the distance is 13½ miles, and between lies the Island of Bonaventure, having bold and perpendicular cliffs on all sides except the west, from which side shoal water extends to the distance of a quarter of a mile. There is anchorage in 15 fathoms between the island and White Head; but the riding is insecure and heavy in consequence of the swell, which, in bad weather, rolls round the island. Between Bonaventure Island and the Percé Rock to the northwestward, the channel is about 1⅓ mile wide and free from danger.

Within Bonaventure Island, and close to the main, to which it is joined by a reef, nearly dry at low water, is the Percé Rock, so named from having two large holes in it, one so large as to admit the passage of boats at high water. It is so precipitous as to be nearly inaccessible, and 288 feet high, and at a distance appears like a citadel. A reef runs out from the shore to the southward of the rock, about half a mile, on either side of which small vessels occasionally anchor.

The town of Percé, behind the perforated rock, is inhabited principally by the fishermen, who have an excellent beach to dry their fish on. At the back of the town is the Mont Percé or Table Roulante, 1230 feet above the sea, from which it rises abruptly on the north side, where the precipices of red sandstone and limestone, 666 feet high, are washed by the waves. At one mile to the southward of Percé town is White Head, off which are 8 to 12 fathoms.

CHALEUR BAY.—The N.E. point of the Bay of Chaleur, named Cape Despair, is of a moderate height, and has at rather more than 1½ mile S.S.E. from it, the Leander Shoal, which is rocky, but with a clear passage between it and the cape. It is about a quarter of a mile in diameter, and has 16 feet least water on one spot, which, however, it is difficult to find. The line of the White Head, in one with the inner or N.W. end of Percé Rock, passes just outside of the shoal, in 7 fathoms; therefore the whole of Percé Rock, well open to the eastward of the White Head, will lead clear outside of all. From a half to the whole of the Percé Rock, shut in behind the White Head, will lead between the Leander Shoal and Cape Despair.

Chaleur Bay is 25 miles wide at the entrance, between Cape Despair and the north part of Miscou Island, with a depth in mid-channel of about 40 fathoms. It is in general easy of navigation, a frequent use of the lead giving good warning of an approach to the shoals. The tides are regular, and have but little velocity, excepting

at the entrance, where they are so irregular that but small dependence can be placed on them. Inside the bay the dense fogs so prevalent in the Gulf are seldom met with; the climate is also much milder.

The North Shore.—From Cape Despair the coast trends to the westward 7 miles to Grand River, with its shallow bar, outside of which to the westward there is a shoal running half a mile from the coast. Beyond this, at the distance of 4 miles, is Little Pabou, and at about the same distance farther to the westward is Grand Pabou, both of which are small fishing-places. At 3½ miles farther is another small fishing-place named Newport, off which small vessels occasionally anchor under shelter of a shoal. To the south-west of this place, distant 6 miles, is Point Maquereau, bold-to and dark coloured, rising to the height of 200 feet, and covered with trees at the top; outside the point are 40 to 50 fathoms.

A few miles to the westward of Point Maquereau is an extensive bay named Port Daniel, where supplies both of wood and water can be obtained. At the head of the bay is the outlet of a small river, near which are the houses of the fishermen. The west point of the bay has a detached rock off it. Port Daniel is exposed to the S.E., and winds from that quarter roll in a heavy swell. This port may be easily recognised by a high hill, one mile to the westward of the harbour, the summit of which is 400 feet above the sea; it is the highest land on this part of the coast, and often appears like an island.

From Port Daniel the coast runs 9 miles to Nouvelle River, a place of no importance, and 5½ miles within this is *Paspebiac,* off which is an excellent roadstead. The point is low, being composed of sand and shingle, and encloses a small lagoon. The town is considerable, although straggling along the coast; and there is an English and Roman Catholic Church. On the west side of the point are a number of fishing-huts, and the extensive white buildings belonging to the fishing-establishment of Messrs. Robins and Co., of Jersey; on this side of the point is also the roadstead, in which vessels lie sheltered from S.E., round north, to West, although open to southerly winds. Jersey vessels lie moored here all the season, on excellent holding-ground. A sandy spit runs out south-westward, about two-thirds of a mile from the point, and affords some shelter to the roadstead. The best berth to anchor is in 6 fathoms, clay, with the sandy point S.E., and Robins' flagstaff East.

In rounding Paspebiac Point from the eastward, keep Daniel Hill well open to the southward of Nouvelle Point until the Roman Catholic Church opens to the westward of the south end of the sandy spit N.N.E.; keep the lead going, and steer towards Carlisle Point, until Robins' flagstaff (at his northernmost large white store) and the above-mentioned church come in one N.E. ½ N.; when you may haul in for the anchorage by your lead, taking care to give the spit a berth in going in.

Carlisle Town is 3½ miles westward of Paspebiac, and is rendered conspicuous by the jail and court-house, which can be seen from the anchorage. The point is covered with wood, and assists in sheltering the roadstead of Paspebiac from the westward.

Five miles to the westward of Carlisle is Bonaventure Point, formed by a low red sandstone cliff, off which a rocky shoal extends to the westward fully a mile, and continues along the coast to Red Point, a distance of about 8 miles. Here vessels may anchor, sheltered from the eastward, riding in 6 or 7 fathoms, with the point bearing S.E. ½ S., the church N.E. ½ E., and the entrance of the river E. ½ N., 1¼ mile. From the extremity of the point the coast trends to the northward 2 or 3 miles to the river of the same name, which is too shallow to be of any use to navigation; and 10 miles farther is another small stream named the Caplin, off the entrance to which there is a reef.

Hence the coast runs to the northward 10 miles, and then trends to the south-westward a similar distance to Carleton, forming the bay of Cascapediac. At the head of this bay is a stream, available only for boats in consequence of the flats which extend out 2 miles from the entrance; to the eastward of this is the village of Richmond, having anchorage before it, in 3 fathoms, with the church bearing N.E. ¾ E., and Black Point, the east point of the bay, S.E. ¾ S.; but you may anchor farther out in 5 or 6 fathoms, although not so well sheltered. When approaching Richmond from the eastward, in order to avoid the shoal that stretches off to the westward 1¾ mile from Indian Point, keep Red Point well open of Black Point S.E. ½ E., and

approach no nearer than 4 or 5 fathoms, until the church bears N.E. by E., when you may steer for it, and anchor as before.

On the western side of the bay are extensive settlements, at the back of which are some lofty hills, conspicuous at a great distance, the highest of which, Mount Carleton, is estimated to be 1830 feet high.

Tracadigash or Carleton Point, the west point of Cascapediac Bay, is low and encloses a shallow lagoon, which admits small craft at high water. On the north side of this lagoon is the village of Carleton, behind which are the Carleton Mountains. Off the point a spit runs half a mile, which can be cleared by keeping in 10 or 9 fathoms, or by bringing Mount Dalhousie just open of Point Maguacha, bearing about W.N.W. $\frac{3}{4}$ W. To the westward of this spit there is good anchorage in $5\frac{1}{2}$ fathoms, mud, with the point bearing S. by E. $\frac{1}{2}$ E.; Carleton Church E. by S.; and the watering-place N. by W. $\frac{1}{2}$ W.: here you will lie, little affected by the tides.

From Carleton Point the coast trends round to the westward 7 miles to Maguacha Point, which is composed of red sandstone cliffs, and has a reef running off it about a mile to the westward. Between, in the northern corner of the bay formed by the two headlands, is an extensive lagoon, nearly dry at low water, into which the New River falls. Outside this basin the water deepens to $2\frac{1}{2}$ fathoms at the distance of a mile. Maguacha Point forms the northern, and Dalhousie Point the southern side of the entrance to the River Ristigouche, which is a broad estuary running some miles into the country.

DALHOUSIE HARBOUR is frequented principally by vessels loading with timber. Off the town is a high and rocky but well-wooded island, 2 cables in length, named Dalhousie Island, which is connected to the shore by a shoal drying at low water; and to the westward of this, at a short distance, there is another islet, also connected to the shore by a sandy spit. Between these islets a sandy strand joins the shore, and it is along the edge of this that the vessels anchor in 6 and 7 fathoms perfectly secure from all winds.

Off the island, on the north side of the harbour, is the Middle Ground, having 6 feet least water on it. Its eastern side is very steep, and a buoy marks its north-eastern extremity. The channel between this part of the Middle Ground and the Canadian shore to the north-eastward, is about three-quarters of a mile wide, with a depth of 12 to 15 fathoms; here the tide runs about 2 knots. The harbour of Dalhousie is very much sheltered from the northward by this shoal.

When making Dalhousie you may do so either from the eastward between the island and the Middle Ground, or by running round to the northward of that shoal, enter it from the north-westward. In this latter course there is much more room, but you have to cross a flat of 3 fathoms water; the other passage is $1\frac{1}{2}$ cable's length wide, with a depth of 6 fathoms, and is quite safe.

To run for the harbour, and being 5 miles south from Carlisle Point, steer N.W. by W., 34 miles, which will bring you midway between the east point of Heron Island and Tracadigash Point; in this run you will shoalen your water from 35 to 10 and 12 fathoms. Off Heron Island a bank runs out some distance, which you may clear by bringing the highest summit of the Scaumenac Mountains open north of Dalhousie island; and you may also clear the spit running from Tracadigash Point by bringing Mount Dalhousie just open of Point Maguacha, bearing about W.N.W. $\frac{3}{4}$ W. From this position (midway between Heron Island and Tracadigash Point) steer about W.N.W. towards Dalhousie Mountain, and when near Maguacha Point avoid the reef running from it, by bringing the highest part of the Scaumenac Mountains open to the south-west of Dalhousie Island; continue sailing on this mark until you get into 9 or 8 fathoms, when the Bonami Rocks will bear about S.W., distant half a mile. Haul now to the northward, keeping in the same depth of water, until Lalime Point, the western point of New Brunswick, comes just open north of Dalhousie Island and the islets and rocks westward of it, and bearing about W. by N. Steer with this mark on, and enter the harbour, being careful not to approach the island nearer than 50 or 100 fathoms; when in the harbour you may anchor in 5 or 6 fathoms.

To enter the harbour by the western and more roomy passage, instead of steering W. by N. for Point Lalime, steer to the N.E. until you get into 8 fathoms on the Canadian shore, in which depth you must continue to work to the westward until Dalhousie Church bears S.W. by S., when it will open to the westward of the island.

Then steer to the westward directly up the estuary, until the church bears S. by W., when you must steer for it, taking care not to bring it to the westward of that bearing, and crossing a 3-fathom flat, you will enter the harbour, where you may anchor as before.

RIVER RISTIGOUCHE.—From Dalhousie the river runs up about 12 miles to Campbell-town, and is navigable for large vessels to within 4 miles of that place, when the channel becomes both narrow and intricate. At its entrance, just opposite Dalhousie, is Fleurant Point, off which is a very convenient anchorage, in 6 or 7 fathoms, for vessels visiting the river for supplies of wood or water: it is easy of access and affords facilities for getting under weigh, in all winds and at all times of tide. Half a mile westward of the point is a brook of excellent water, and a little farther westward is a dangerous reef named the Mussel Bank, which extends nearly half-way across the river.

Campbell-town is situated at the foot of a lofty hill named the Sugar Loaf, estimated to be 950 feet high. Here it is high water at 4h., with a rise at spring tides of 9 or 10 feet, and at neaps of 7 feet water. When the tide is up vessels drawing about 20 feet water can ascend the river as far as the town, off which they may lie afloat at low water. Small craft may ascend still farther up.

The South Shore.—From Dalhousie the coast runs to the eastward about 1¼ mile to Bonami Point, off which are some high steep rocks, with no passage between them and the shore. Hence to the small River Carlo the distance is 4¾ miles, with a shallow lagoon about half-way between, named the Eel River; and 3 miles farther is Heron Island, which is 4 miles long and of moderate height. Between the island and the shore there is a channel of 3 to 5 fathoms at low water, in which is good anchorage, but it is narrow and contracted by the shoal water on either side; near the eastern part of the channel, and directly in the middle, is the Heron Rock, a danger of only 6 feet water, with 4 to 5 fathoms all round it. It is recommended always to take a pilot, as the navigation is very intricate.

Three miles from Heron Island is the entrance of the River Nash, resorted to by vessels for timber, which moor outside in 4 fathoms, muddy bottom, with the east point of Heron Island bearing N. by W., 2½ miles, and Black Point N.W. one mile. In this position they are much exposed to easterly winds, but the ground being good, they are enabled to ride in safety during the summer months. About 3½ miles S.E. from Heron Island and 1½ mile off-shore, there is a rocky ledge upon which not less than 4 fathoms was found, yet there may be less water. Hence to Belledune Point the distance is about 9 miles, when the coast turns to the southward, a distance of 16 miles, to the entrance of Bathurst Harbour, at the head of Nipisighit Bay; in this last distance the only objects of particular remark are the church and village of Rochette situated about half-way. The whole of this coast is low and moderately clear, and may be approached by the lead, but a large vessel is recommended not to get into a less depth than 10 fathoms.

BATHURST HARBOUR is about 2 cables' lengths in width, between Carron and Alston Points, which are of sand, with stores and other buildings upon them. There are two beacons on Carron Point, on the S.E. side, which, when kept in one, bearing S.W. ¼ S., lead in through the narrow channel over the bar, in 7 feet at low water, and 14 at high water, spring-tides. From 3 fathoms outside the bar to the entrance of the river is 1½ mile, very narrow the whole distance, and between sandy shoals, nearly dry at low water. Between the sandy points, or just outside in 3 or 4 fathoms, vessels generally moor to take in timber. It is high water at Bathurst Harbour at 3h. 15m.; spring-tides rise 7 feet, neaps 4.

The Town of Bathurst is well situated 2½ miles within the entrance, and at the head of the basin. A depth of 14 feet at high water can be carried up to the wharves of the town, and vessels may lie in 14 feet at low water, in some parts of the channel; here the tide runs from 1½ to 2 knots, and sets fairly in and out over the bar, which should never be crossed without a pilot; they are always on the look-out for vessels. The bar bears from Paspebiac Point, on the Canadian shore, S.W. by W. ⅛ W., distant 8 leagues.

Some few vessels load inside the bar, but the usual place of anchorage is just outside in 6 or 7 fathoms, muddy bottom, where there is safe riding in the summer months, but exposed to N.E. gales, which are attended with a heavy sea.

From Bathurst Harbour the coast runs to the north-eastward to Point Mizzenette,

a distance of 29 miles, and is clear, with the exception of a 3-fathom shoal, three-quarters of a mile from the shore, about 9 miles from Bathurst; it may in general be approached to the depth of 10 fathoms, which is near enough in the night-time. Eastward of Mizzenette Point the shoal water extends half a mile out.

CARAQUETTE HARBOUR.—After passing Mizzenette Point the coast line falls back and is bordered by several islands and dangerous shoals, within which there is an excellent harbour affording safe anchorage in from 4 to 2½ fathoms.

Nearly 3 miles E.S.E. of Point Mizzenette is Caraquette Island, which is low and wooded, and 1¼ mile long in a direction nearly parallel to the coast. Sandy points extend from both ends of the island towards the mainland, or to the southward, so as to form a bay, in which there is a perfectly land-locked anchorage for vessels not drawing more than 15 feet. There is no passage for shipping between the island and Point Mizzenette, but only a very narrow channel for boats on the side next the island. The island stands on an extensive bank of flat sandstone, partially covered with sand, and which, commencing at Point Mizzenette, extends to the eastward parallel to the coast all the way to the entrance of Shippigan Sound, a distance of 8 or 9 miles.

Caraquette Shoal extends 4½ miles to the eastward of the island, from which it dries out occasionally in very low tides to the distance of 2 miles, and is very shallow in every part. From its east end, Caraquette steeple bears W. ½ S., and in one with the extreme of the trees on Caraquette Island; and Shippigan steeple, South, in one with Pokesuedie Point. This latter bearing clears the shoal to the eastward in 3 fathoms at low water; but a large ship must keep Point Pokesuedie bearing S. by W. ¼ W., and in one with Point Marcelle.

Mizzenette Ledge of Rocks, with 5 feet least water, bears N.N.W. 1¼ mile from the west end of Caraquette Island, and will be cleared to the northward, in 3½ fathoms, by keeping Donax Point just open to the northward of Point Mizzenette, bearing W.N.W. ¾ W.; which mark will also lead to the eastward along the northern edge of the Caraquette Shoal until it strikes the Scollop Patch, which has 16 feet least water over a rocky bottom. When on this patch, Caraquette Church steeple and the N.W. end of Caraquette Island are in one, and the S.E. end of the island will bear S.S.W. ½ W., distant 2 miles.

The Fisherman Ledge is a detached bed of rocks, with 10 feet least water, lying to the northward of the Caraquette Bank, and separated from it by Fisherman Channel, which is a mile wide and from 4 to 7 fathoms deep. This ledge, lying more in the way of vessels than any other in the Bay of Chaleur, is 1¾ mile long in an E. ½ S. direction, and a third of a mile wide from 3 fathoms to 3 fathoms. The northern edge of this ledge is distant 3 miles from Caraquette Island, and its east and west ends bear N.N.E. from the corresponding points of the island. The points of cliff at Great Anse and Donax Point in one, bearing W. by N., lead through Fisherman Channel; it cannot, however, be recommended to large vessels.

Pokesuedie Shoal is an extensive flat of sand extending 2 miles to the northward and eastward from Pokesuedie Island, and has only 6 or 7 feet water over the greater part of it. Caraquette steeple and the sandy S.E. extreme of Caraquette Island in one, bearing W. ¼ S., lead over its north point in 2 fathoms at low water; and if the steeple be kept half-way between the extreme of the sandy point, and the extreme of the trees on the same island, the north point of the shoal will be cleared in 4½ fathoms.

The channel forming the entrance to the harbour of Caraquette lies between the Pokesuedie and Caraquette shoals for about 2½ miles, and has water enough for the largest ships; but it is crooked, and only 220 fathoms wide between very steep shoals, and without sufficient leading marks; hence its navigation is attended with some difficulty. The harbour commences immediately within, or to the westward of Pokesuedie Island, and extends westward between the mainland and Caraquette Shoal and Island. Caraquette Church stands conspicuously on a ridge nearly opposite Point Mizzenette, and the fish-stores and houses of Lower Caraquette nearly opposite to the island. There are 5 and 6 fathoms in the eastern part of the harbour immediately within Pokesuedie, and there are not less than 3½ fathoms till within half a mile of the S.E. point of the island.

Between the island and the main, the channel is only 120 fathoms wide and 2½ deep; but farther westward it increases to a quarter of a mile wide and 4½ fathoms

deep, and is there sheltered by the Mizzenette Sands, which dry at low water nearly across to the island. The bottom is sandy in the entrance of Caraquette Channel, and of mud within the harbour. Although this harbour is excellent for merchant-vessels of large tonnage, it is exceedingly dangerous to attempt to run for it without a pilot. The tides rise from 3 to 6 feet, and seldom run stronger than one knot per hour.

SHIPPIGAN SOUND.—This extensive place is formed by Pokesuedie Island and the mainland on the west, and by Shippigan Island on the east. Simon Inlet, which is the best harbour in the Sound, is situated on the western side within Pokesuedie Island: here you can lie landlocked in water deep enough for large ships. The bays of Alemek and Little Alemek lie on the opposite or Shippigan side. Alemek Bay lies most to the southward, and is an excellent harbour containing 3 and ¼ fathoms water. A bar of mud and sand extends across the Sound which limits the depth that can be carried into Alemek Bay to 2¾ fathoms, and into Shippigan Harbour to 2½ fathoms at low water. On the south side of the bay stand the church and village of Shippigan, and off them is the harbour of Shippigan, a narrow channel with 2½ to 4 fathoms water lying between shoals of mud and eel-grass nearly dry at low water. This narrow channel continues 2½ miles beyond the church, and terminates at Shippigan Gully, the southern entrance of the Sound, which is used by shallops and fishing-boats. In Shippigan Gully the tide is generally very rapid, and there is often a heavy surf on its bar of sand, which partly dries at low water, leaving a channel only 4 or 5 feet deep. The harbour of Shippigan is perfectly secure in all winds, and it is there that the greater part of the vessels which have recently visited this place for timber lie moored. At a short distance westward of the church is the watering-place at a small stream in Basse Bay.

The channel leading from Shippigan Flats to the church is 9 miles in length, with deep water, but it is narrow and crooked, without leading marks; and some of the banks are very steep, so that an experienced pilot is absolutely necessary to navigate a large vessel into this harbour with safety. In Shippigan Harbour it is high water F. and C., at 3h. 42m.; spring tides rise 5½ or 6 feet, neaps 3 feet. In the channel the rate seldom exceeds a knot. The stream is regular in fine weather, running in at the Gully, to the northward, through the Sound, into the Bay of Chaleur, from about half-ebb to half-flood by the shore, and in the reverse direction, or to the southward, from about half-flood to half-ebb.

A flat extends 2¾ miles off the north side of Shippigan Island, and is the most northern of the Shippigan Shoals. It consists of sandstone, thinly and partially covered with sand, and has on some parts only 6 feet of water. There is good warning by the lead all along its northern side, which may be safely approached to 6 fathoms in a large ship, and to 3 fathoms in a small vessel. This flat separates the channel leading to the harbours of Caraquette and Shippigan from that which leads into Miscou Harbour.

MISCOU HARBOUR, between Miscou and Shippigan Islands, lies just within the sandy spit at the S.W. extreme of Miscou, where there are from 4 to 6 fathoms, for upwards of a mile in length, and 2 cables' lengths wide. This forms the harbour for large vessels; but the harbour for small craft is still more extensive, there being a considerably greater breadth with 2 and 2½ fathoms water, and also a narrow channel extending eastward through the flats of mud and weeds to within a mile of Miscou Gully, which boats can only enter at high water. Within the harbour the bottom is soft mud; in the channel, just outside the entrance, sand; and, between the shoals farther out, sandstone. This place is much frequented by the American fishermen, who are good pilots for it. The Miscou Channel, leading to the harbour, between Shippigan Flat and the Shippigan Shoals on the S.W., and the Miscou Flats on the N.E., is only 170 fathoms wide in one part, between shoals so steep that the lead affords not the slightest warning. Only small vessels should attempt this harbour without having first buoyed the channel, or secured the assistance of a good pilot. It is high water F. and C., at 3h. 30m.; spring tides rise 5 feet, neaps 3 feet.

At fully 4¼ miles off to the N.W. of the S.W. point of Miscou, is the 5-fathom edge of the Miscou Flats, and at 2¼ miles from the same point there are not more than 3 fathoms. These flats, of sandstone, extend 4 or 5 miles to the N.E. of the harbour; and towards their northern termination there is an opening in the trees

which extends across the island, and which has been mistaken by vessels, at night or in foggy weather, either for the harbour or the Gully, according as they were west or east of the island. The remainder of the shore is tolerably bold, with steep sandy beaches surrounding the north end of Miscou Island, where the huts and stores of fishermen will be seen along the shore. The *north-east*, sometimes called the north, point of *Miscou Island* has a lighthouse upon it, exhibiting a red light 76 feet above high water, visible 12 miles in clear weather. Shallow water extends 3 miles in a N. by E. direction from the light, but on other bearings it may be approached from the eastward to within a mile of the shore.

The north point of Miscou Island is further distinguished by a green mound or grassy sand-hill, and the shallow water does not extend more than one-third of a mile off-shore; but to the eastward, opposite a small lagoon, where there are several huts and fishing-stores, shallow water, to 3 fathoms, stretches off a mile north-eastward, and to 5 fathoms $2\frac{1}{2}$ miles in the same direction. At $1\frac{1}{2}$ mile south-eastward of the north point is Birch Point, which is a steep cliff of sandstone about 10 feet high, and may easily be recognised by the white birch-trees, which are higher there than in any other parts near the shore. A reef of stones and sand extends half a mile out from the shore. The shoal off the north point may be avoided either by day or night, by the soundings on the chart. Very good anchorage may be obtained on either side of it; under the north point in from 5 to 10 fathoms, with southerly winds, and off Birch point, in from $3\frac{1}{2}$ to 6 fathoms, with westerly winds—the bottom being of sand, which holds sufficiently well for off-shore winds.

The Miscou Banks extend about 22 miles eastward of Miscou, and the soundings upon them will fully direct a vessel approaching this part of the coast. The shoalest part of the banks are on an easterly line of bearing from Birch Point, whereon, for the first 6 miles off-shore, there are only from $5\frac{1}{2}$ to 7 fathoms on a rocky bottom; after which the water deepens rapidly, there being from 12 to 17 fathoms with red sand, rock, and shells for the next 9 miles, at the end of which it deepens to 20 fathoms; 7 miles farther, with depths between 20 and 30 fathoms, over red sand, gravel, shells, and broken coral, brings us to the edge of the bank, where the depth increases rapidly to about 40 fathoms, and the soundings change to mud. The northern edge of the banks, in 30 fathoms, is 7 or 8 miles northward of the easterly line from Birch Point, and passes the north point of Miscou, at the distance of 4 miles, into the Bay of Chaleur, thus affording excellent guidance to vessels. These banks continue to extend off the coast to the southward, but with more regular soundings, and a greater general depth than in the part to which the name of the Miscou Banks has been applied.

The Coast Southward.—From the east side of Miscou Island to the lighthouse on Point Escuminac the course is S.W. by S., and the distance from the north point of Miscou to the same object is 58 miles. The coast between is low and wooded, with sand-bars and beaches, enclosing several lagoons, the entrances to which, called Gullies, have shifting bars before them. They all afford shelter for boats; but in the whole distance there is not any harbour for shipping until we arrive at Miramichi. The coast may be safely approached to 10 fathoms in the night-time, and to 6 or 5 fathoms in the day-time, as there are no detached shoals during this course, though in several places shoal water extends to a considerable distance, as at Wilson Point, on the east side of Miscou Island, where a sandy shoal extends a mile out to 3 fathoms, and $1\frac{1}{2}$ mile to 5 fathoms at low water. Again, the shoal water extends two-thirds of a mile off Miscou Gully, 7 miles southward of the north point of Miscou; and 4 or 5 miles farther southward, off the low sandstone cliffs of Shippigan Island, there are rocky patches with little more than 2 fathoms upon them, and nearly a mile off-shore. Still farther southward, along the coast of Shippigan Island, and 6 miles northward of Shippigan Gully, there is another similar patch at nearly the same distance from the shore.

MIRAMICHI BAY.—The north point of the Bay is Point Blackland, which is low and swampy, with steep and black peaty banks. Round it and within the sandy bars, there is a boat communication between Tabisintac Lagoon to the northward and the inner Bay of Miramichi.

The outer bay is about 14 miles wide from the sand-bars off Point Blackland to the lighthouse on Point Escuminac, and $6\frac{1}{2}$ miles deep from that line across its mouth to the main entrance of the inner bay, between Portage and Fox Islands. The

outer and inner bays are separated by a range of low sandy islets, between which are three small passages and one main or ship channel.

Escuminac Point Lighthouse is built of wood, and painted white; it exhibits a fixed light at 70 feet above the sea, visible 14 miles.

The northernmost of the sandy islets is named Negowac Sand-Bar, which, together with several sand-bars lying off Point Blackland, form the shore for 4 miles to the W.S.W. from Tabisintac Gully. Between Negowac Sand-Bar and a small one to the S.W. is a gully 280 fathoms wide, and 3 fathoms deep; but a sandy bar of the usual changeable character lies off it nearly a mile to the S.S.E., and had about 9 feet over it at low water at the time of Admiral Bayfield's survey. There is a very narrow channel within the gully, leading westward up the inner bay, but it is only fit for boats. Between Negowac Gully and Portage Island, a distance of $1\frac{1}{4}$ mile to the S.W., there are several shoals which dry nearly at low water.

Portage Island is 4 miles long in a S.W. by S. direction, and the channel between it and Fox Island is $1\frac{1}{2}$ mile wide. Fox Island is $3\frac{3}{4}$ miles long, in a S.S.E. direction; and between it and Huckleberry Island is Fox Gully, which is 150 fathoms wide at high tide, and has from 2 to $2\frac{1}{2}$ fathoms water, but there is a bar outside, with only 7 feet on it at low water. Huckleberry Island is about $1\frac{1}{2}$ mile long in a S.E. direction; and between it and the mainland is Huckleberry Gully, 200 fathoms wide, but not so deep as Fox Gully. Both Fox and Huckleberry Gullies are only fit for boats or very small craft. At rather more than a mile from Huckleberry Gully, towards Point Escuminac, stands the South Beacon, which is large and white, and has a white-roofed barn behind it; and for 2 miles along the shore, to the eastward of the south beacon, there are houses, where some of the pilots reside. Point Escuminac is low, covered with spruce-trees, and may be known by its lighthouse, painted white, which exhibits a fixed light at 70 feet above the level of the sea. Escuminac Reef is very dangerous, as it runs off fully 2 miles to the N.E. to the 3-fathom mark, and nearly $2\frac{3}{4}$ miles to 5 fathoms. At night come no nearer than 10 fathoms.

Eastward of these islands the shallow water runs off to a considerable distance. From the north-east end of Negowac Sand-Bar, in a S.W. direction, to the middle of Portage Island, a distance of 6 miles, the shallows run off about $1\frac{1}{4}$ mile; thence they run in a S.E. by S. direction, 6 miles, to the entrance of the Ship Channel; in the latter distance the shoals run off fully 3 miles from Fox Island and the south part of Portage Island. An extensive flat also borders the south side of the bay, from Huckleberry Island to the pitch of Escuminac Reef, and in its eastern part, for fully 3 miles, extends 2 miles from the shore; but when you approach the pilots' houses and the south beacon, you may approach within a mile of the shore. You cannot approach the land so near in any other part of the bay as off the south beacon.

Upon the bar of Miramichi there is only a foot or two of water in some places at low spring-tides; but there is water enough for small vessels near Portage Island, and there is a still deeper part near its S.E. end. The S.E. extreme of this bar will be cleared by keeping the church at French Village in the centre of Fox Gully, bearing W. $\frac{1}{2}$ S. A black buoy is moored at the S.W. extreme of the bar, in 3 fathoms at low water, and must be left on the starboard hand going in; and about a mile N.N.W. from this black buoy there is a red buoy moored in the same depth of water on the Lump (a shoal with 2 fathoms least water on the west side of the channel), and which must be left on the port hand going in. Within this red buoy the channel is clear and straight, about 500 fathoms wide, and from 4 to 7 fathoms deep, running in a N.W. $\frac{3}{4}$ N. direction for 3 miles, until you arrive at the Spit buoy, which is also a red buoy, and must likewise be left on the port hand going in.

On the north point of Fox Island two small beacons will be seen on the sand-hills, the one red and the other white: these kept in one, and bearing S.E. $\frac{1}{2}$ E., lead in the deepest water, from $2\frac{1}{4}$ to $2\frac{1}{2}$ fathoms, to the outer red buoy of the Horse-shoe.

The *Horse-shoe Shoal* is 3 miles long north and south, and $2\frac{1}{4}$ miles wide. It consists of sand and gravel, with 3 feet least water, and not more than 6 feet over many parts of it. Its north-east extreme is nearly joined to the shoals of Portage Island, there being only a narrow and intricate channel left which is never used. Good anchorage may be procured in 4 or 5 fathoms water between the Horse-shoe and the south end of Portage, where vessels, drawing too much water to cross the inner bar, may safely anchor during the summer months. The Horse-shoe Shoal is separated

from the shoal which connects Fox, Egg, and Vin Islands, by the very narrow ship channel, which in one part is only 180 fathoms wide, and 2¼ fathoms deep. This is named the Horse-shoe Bar, or Inner Bar, over which are 18 feet water in ordinary spring-tides. The south side of the Horse-shoe is marked by buoys, which must be all left to the northward, the best water being within the distance of half a cable from them. The S.E. point of the Horse-shoe extends 350 fathoms farther out to the eastward than its outer red buoy; and there is besides a patch, or mound of sand and gravel, with only 10 feet water, lying off the S.E. point of the Horse-shoe to the S.E. so as to narrow the navigable channel between it and Fox Island to a third of a mile. The two small beacons on the north point of Fox Island are useful in enabling vessels to avoid that mound, which renders the passage of the Horse-shoe Bar so difficult for a large vessel.

The Bar of Miramichi should never be attempted by a large vessel, or by persons not properly acquainted with it, without a pilot. The Miramichi pilots will generally be found cruising about off Point Escuminac in small schooners; but should you not meet with a pilot off Point Escuminac, and it is too late in the day to cross the bar before dark, you should stand off and on till daylight, and not shoalen your water to less than 12 fathoms, particularly with the wind from the eastward.

MIRAMICHI is a place of great trade, and a free warehousing port; and the different towns on its banks are rising in importance. Large quantities of timber are annually shipped here; and the salmon and Gaspereaux fisheries are also carried on in their season. The four principal towns are Chatham, Douglastown, Newcastle, and Nelsontown.

Chatham, the principal town on the Miramichi, and containing, at a rough estimate, about 2000 inhabitants, lies about 17 miles westward of the Horse-shoe Bar, and extends along the south shore about 1¼ mile. Here vessels lie in 6 to 8 fathoms, close to the wharves. It is a straggling but rapidly increasing town, having some good houses, and an English Episcopalian, a Presbyterian, and a Roman Catholic church, besides two other chapels or places of worship belonging to the Wesleyans and Antiburghers. These buildings are all of wood, neatly painted and finished, and together with the steam saw and grist mills of the Messrs. Cunard form the most remarkable objects.

Douglastown is on the north shore, about 1½ mile above Chatham, and contains about 400 inhabitants. It is prettily situated on a rising ground, and has sufficient water at its wharves for the largest ships. The Marine Hospital, built of stone, is the most remarkable structure. The ship-building establishment of Mr. Abram is 1¼ mile above Douglastown, on the same side of the river; and opposite it, on the south shore, is the English Episcopalian Church of St. Paul.

Newcastle, 1½ mile farther up the river, and on the north shore, is the county town, containing the Court-house and Jail, a Presbyterian church, a Wesleyan chapel, and some other good buildings. It is pleasantly situated, and contains about 1000 inhabitants. Here are 6 or 7 fathoms water close to the wharves of the town.

Nelsontown is the last village: it is a straggling place, with 200 or 300 inhabitants, chiefly Irish. Here is a large wooden Roman Catholic church: it stands on the south shore, opposite the east end of Beaubere Island, and a mile above Newcastle. The river is navigable as far as Beaubere Island for any vessel that can cross the Horse-shoe Bar.

TIDES.—It is high water at Miramichi Bar at about 5h.; spring-tides rise 5 feet, neaps 3 feet. At Sheldrake Island, at 6h.; spring-tides rise 5 feet, and neaps 3 feet: the ebb-tide runs at the rate of 3 miles an hour in the Sheldrake Channel. It is high water at Beaubere Island, F. and C., at 6h. 30m.; spring-tides rise 6 feet, neap-tides 4 feet; the ebb runs at the rate of 2 knots, and the flood about a knot. At the rapids, in both the S.W. and N.W. arms, the tides flow until 8h., and they rise here about 2 feet.

POINT ESCUMINAC TO THE GUT OF CANSO.

POINT ESCUMINAC, as before mentioned, is low, covered with spruce-trees, and rendered conspicuous by its lighthouse, which is painted white, and serves to warn vessels of their approach to the reef which runs off 2 miles N.E. from the point.

Sapin Ledge.—At 5½ miles S.S.W. from Point Escuminac is Point Sapin, and the intermediate shore is very low and shallow. The Sapin Ledge lies directly off the point, and is very dangerous, having only 12 feet on it, and lying right in the track of ships running alongshore. In the night-time it should not be approached nearer than 9 fathoms; and it should at all times be remembered that there are 5 fathoms at only about 2 cables' lengths from it. This ledge is 1¼ mile long from east to west, and half a mile broad; from its outer edge Escuminac lighthouse bears North, distant 6 miles, and Point Sapin E.S.E. ½ E., 2½ miles. A depth of 3½ fathoms will be found between it and Point Sapin.

From Point Sapin to Richibucto Head the course and distance are S. ¾ W. nearly 20 miles, across Kouchibouguac Bay, the shores of which are very low, with sand-bars and beaches, enclosing lagoons, through which rivers flow into the sea. Kouchibouguac River, after flowing more than a mile through an extensive lagoon, nearly dry at low water of spring-tides, enters the sea by an outlet through sand-bars about 9 miles S.W. from Point Sapin. This river has a bar of sand which frequently shifts. A depth of 9 feet at high water and spring-tides could be carried in over the bar at the time of Admiral Bayfield's survey in 1839. The tides rise from 2½ to 4 feet, and flow 8 miles up the river. In all the northern part of Kouchibouguac Bay the shoal water (that is, to 3 fathoms) extends to some distance off-shore, till it joins the Sapin Ledge.

RICHIBUCTO RIVER is, among the rivers on this part of the coast, inferior only to the Miramichi, either in the distance to which it is navigable, or in the depth of water over its bar. On its banks there are flourishing and rapidly increasing settlements. The town of *Liverpool* stands about 3 miles within the entrance, on the north side of the river.

The entrance of the Richibucto lies between two sand-bars, several miles in length, named the north and south beaches, on which there are sand-hills 30 feet high; it is about 360 fathoms wide. Any vessel that can pass the bar may be taken 13 miles up the river, and small vessels can go up nearly 20 miles. A pilot is absolutely necessary.*

A reef of sandstone extends off Richibucto Point (which is the S.E. extreme of the south beach, and 3½ miles from the river's mouth) to the distance of a mile from the high-water mark, and continues 2 or 3 miles farther to the southward, to Richibucto Head, which is 50 feet high, and composed of sandstone and clay cliffs.

The course and distance from Richibucto Point to the S.E. extremity of the Buctouche sand-bar is S. 14½ miles. In this space there is nothing worthy of notice excepting the small river Shockpish, which affords shelter to boats at high water.

The North Patch, of only 12 feet, must be carefully avoided when approaching Buctouche Roads from the northward; it has 5 fathoms just outside of it. It lies on the N.E. part of the outer bar of Buctouche, and 2 miles off the shore, with Cocagne steeple and the N.W. extreme of Cocagne Island in one, bearing S.S.W. ½ W., and

* The bar of this river appears to be more dangerous than formerly, it having been said that vessels drawing 12 feet are unable to cross it. We copy the following from the *Shipping Gazette* of Nov. 25th, 1853:—"The entrance to the port is impeded by a sand-bar, about 3½ miles from the town of Liverpool. It is stated, in the sailing direction book for this coast, the depth of water on the bar is 13½ feet at low, and 17½ feet at high water, spring-tides. We find that vessels drawing 12 feet of water have been detained several weeks for want of sufficient water on the bar. The tides are more or less influenced by winds. As the entrance is exposed to heavy gales from the N.E., it has occasioned a *decrease* in the depth of water, which is extremely dangerous to vessels drawing above 12 feet when loaded, as they must complete their loading outside of the bar, riding in an open sea, so that if it blows a N.E. gale, a vessel must unavoidably go on shore; it is almost impossible to escape. There are no less than ten wrecks at the entrance of said harbour (if not more). Another danger is, when outside with rafts of timber or deals alongside, that it often occurs the last tiers of the rafts are lost in consequence of the heavy swell that a N.E. breeze occasions, which separates the tiers, and they then go adrift.

We would recommend masters of vessels not to load to a deeper draught than 11 feet 9 inches, to ensure their going over the bar at high-water springs."

But again, in August, 1860, the *New York Journal of Commerce* published a paragraph, wherein it was stated that, "a great objection to the harbour of Richibucto has been the risk run by large ships, which have had to finish loading outside the bar at an extra expense, and in an exposed situation. Of late years the water has been gradually *increasing*, and it is now stated that the sand which had reduced the depth on the bar from 18 feet some 20 years ago to 12 or 12½ feet in 1855, has been displaced, and there is now a clear channel, enabling ships drawing 17 feet to pass in or out without difficulty at stream-tides."

the south end of Buctouche Sand-bar S.W. by W.; by keeping in five fathoms you will pass outside of it. The Outer Bar of Buctouche is a long ridge of sandy and rocky ground with from 2¼ to 3¾ fathoms, extending to the southward, and parallel to the shore from the North Patch nearly to Cocagne, a distance of 7 miles. Between it and the shore there is a narrow channel of various depths, from 3¼ to 5 fathoms.

Buctouche Roadstead, off the entrance of Buctouche River, and in the widest part of the channel within the outer bar, is perfectly safe for a vessel with good ground tackle; the bottom being stiff clay, and the outer bar affording protection from any very heavy sea. It is here that vessels of too large a draught of water to enter the river, lie moored to take in their cargoes. When approaching this anchorage there is nothing in the way of vessels that do not draw too much water to cross the outer bar, except the North Patch, before mentioned: but large vessels will find more water (not less than 3½ fathoms) by approaching from the northward, by attending to the following directions. If off the coast, with a leading wind, bring Buctouche steeple to bear to the southward of West, and run in-shore with it on that bearing, in order to pass to the northward of the North Patch. As you run in, you will, if the weather be favourable, observe Cocagne steeple open out to the westward of Cocagne Island, so as to be seen between the latter and the mainland; and you must continue your course till the steeple comes on with the extreme of Dickson Point, a small peninsula point about 2½ miles to the southward of the sand-bar. Change the course immediately, running with Cocagne steeple and Dickson Point in one, bearing S.S.W. ¼ W., and they will lead you close inside of the outer bar, and clear of a small shoal lying between it and the shore, on which there are not less than 2¾ fathoms. Take care not to shut the Cocagne steeple in behind Dickson Point, as you run along the sand-bar, and immediately after Buctouche steeple opens out to the westward of the small sandy islet which forms the S.W. point of Buctouche Sand-bar, you will observe two white beacons on the mainland come in one bearing N.W. by W. ¾ W.; anchor with them in one, and Cocagne steeple open about its own breadth to the left or eastward of Dickson Point, and you will be in the best berth in 3¾ or 4 fathoms at low water, and with excellent holding-ground. If the state of the weather should prevent the leading mark from being distinguished, the chart and the lead ought to be sufficient guides.

Buctouche River enters the sea to the S.E., through the shallow bay within the Buctouche Sand-bar. The two white beacons, before mentioned, which point out the best anchorage in the roadstead, are intended to lead in over the bar of sand and flat sandstone, in the best water, namely, 8 feet at low tide, and 12 feet at high water in ordinary spring-tides. To enter the river, the assistance of a pilot is absolutely necessary, as the channel is narrow and intricate.

Cocagne Harbour, 6 miles south of Buctouche, lies between Cocagne Island on the north side and Point Renouard on the south side. It is a very small harbour, and requires the assistance of a pilot.

At nearly 4 miles southward of Cocagne, and nearly 10 miles S. ½ E. from the S.E. point of Buctouche Sand-bar, is Shediac Point, off which the *Grandigue Shoal*, with from 14 to 18 feet water, extends to the distance of 2 miles, having the least water near its outer edge. You can pass outside of this shoal by not approaching the shore nearer than 5 fathoms at low water.

SHEDIAC BAY is 6½ miles wide from Shediac Point to Point Bouleaux, and about 5 miles deep. Near the head of the bay is the island, within the north end of which is the village, accessible for small vessels. A small fixed light is shown from a lantern on a pole at Chêne Wharf, during the summer season; it is 15 feet high, and visible 6 miles. The harbour lies between the S.W. point of Shediac Island and Point Chêne; the latter bearing from the former S.S.E. three-quarters of a mile. A sandy bar runs out from Point Chêne to the northward, 800 fathoms, and is dry for nearly half that distance at three-quarters ebb. This bar, together with the shoal farther out, off the S.E. point of Shediac Island, render the harbour very secure. Near the middle of the bay, which is all shallow, there are two rocks, of 7 and 8 feet, lying E.S.E. from the centre of Shediac Island. The easternmost, named Medea Rock, lies 2 miles from the island; the western, named the Zephyr Rock, lies nearly midway between Medea Rock and the island. The passage into the harbour is to the northward of the above rocks, and along the eastern side of Shediac Island, about two-thirds of a mile from it, between the shoal off the S.E. point of the island and Zephyr Rock.

Shediac, although well situated, is not a place of much trade, only a few cargoes of timber, principally deals, being shipped at it annually for the British market. Strangers bound to this place should have the assistance of a pilot. The depth that can be carried in by a good pilot is 14 feet at low water, and 18 feet at high water in ordinary spring-tides. The Shediac and Scoudouc are very small rivers, only navigable for boats for a few miles. The tides at Shediac, when unaffected by winds, rise 4 feet in ordinary spring-tides, and 2 feet in neap-tides; and the rate of the stream of either ebb or flood seldom exceeds half a knot.

Between Point Bouleaux and Cape Bald are Bouchagan and Kouchibouguet Rivers, which can only be entered by boats at high water. A reef extends more than a mile from the shore off Point Bouleaux, but Cape Bald, 11 miles eastward of Shediac Island, is bold and may be safely approached by the lead to 5 fathoms.

From Cape Bald to Cape Bruin the bearing and distance are S.E. by E. nearly 13 miles. In this distance the coast is free from danger, the shoal water extending only about half a mile off-shore: and a vessel may safely approach at night to the depth of 6 fathoms at low water. But greater caution will be requisite farther to the eastward on account of the dangerous shoals which commence off Peacock Cove, which is in the bay between Cape Bruin and Cape Jourimain. Great and Little Shemogue Rivers are 7 and 9½ miles respectively to the S.E. by E. of Cape Bald. They are only fit for boats and very small vessels, having very narrow and intricate channels, over shifting bars of sand. Good anchorage may be got off these rivers in 5 or 6 fathoms sandy bottom.

Cape Jourimain bears S.E. by E. ½ E., 6½ miles from Cape Bruin, and is the north extreme of the Jourimain Shoals, and forms the extreme point of land to vessels running through the Strait of Northumberland, either from the eastward or westward. There is good anchorage in the bay between Cape Bruin and Cape Jourimain, in 5 fathoms, sandy bottom, and shelter with winds from the S.E. by E. round by south to W. by N. The Jourimain Shoals are very dangerous to vessels in the night, and the lead should always be kept going when approaching them in dark weather; and when to the eastward of them, come no nearer than 9 fathoms, but to the westward they may be approached as near as 7 or 6 fathoms. Shoal water extends from the cape, N.N.W. 1½ mile, and from thence it extends 4½ miles to the S.E.; near this point of the shoal is a patch of only 6 feet at low water, as shown by the chart; this lies 1¾ mile from the shore, and is very dangerous, being bold-to on the east side. To the westward of the cape the shoal water extends fully 4 miles, and runs off fully 2 miles from the shore; but you may approach this part to 6 or 5 fathoms.

CAPE TORMENTINE is the great headland which forms the eastern extremity of New Brunswick within the gulf. Indian Point may be said to form the southern, and Cape Jourimain the northern points of this headland, which is a place of importance in a nautical point of view, not only from its position, but from its dangerous and extensive shoals. The Tormentine Reefs are very dangerous in consequence of the strong tides in their vicinity. They extend off Indian Point rather more than 3 miles to the E.S.E., and there is rocky ground, with 4 fathoms, fully a mile farther off-shore. The part of these reefs which dries at low water is very small, and bears E.S.E. ½ E., 2¾ miles from Indian Point. These reefs should, at all times, be approached with caution by the lead, and should not, particularly with light winds, be approached nearer than 9 fathoms, when north-eastward of them, as the flood-tide sets over them to the southward, into Bay Verte, at the rate of 3 knots, causing a great rippling over the part that dries, and thus indicating its position. There is a patch of rocks, with 7 feet at low water, nearly midway between the dry part of the reef and Indian Point. Small vessels carry a depth of 2½ fathoms at low water, between that patch and Indian Point, and often take shelter under the latter in northerly winds.

BAY VERTE is 9 miles broad across its entrance, from Indian Point in New Brunswick, to Coldspring Head in Nova Scotia, but contracts to the breadth of 2½ miles near its head. It is 11 miles deep, and separates the two provinces just named; their boundary continuing across the isthmus from the head of Bay Verte to Cumberland Basin, a distance of about 11 miles. There is no harbour in Bay Verte, and it is completely open to easterly winds, as well as very shallow near its head, where flats of mud and weeds dry out to a distance of three-quarters of a mile from the shore.

Gasperean River lies in the northern corner of the head of the bay, and half a mile southward of its mouth are the remains of Fort Monckton, on Old Fort Point, now washed by the sea.

Tignish River, the principal stream in the Bay of Verte, enters the bay on the south side near its head. When the tide is out, the very narrow channel of the river has only 3 feet of water, and it is approached by a narrow channel, from 3 to 7 feet deep, through flats of mud and weeds, which dry out a little from its mouth. Considerable quantities of deals are annually rafted down this river, whence they are chiefly taken in small schooners, or in rafts along shore, to Pugwash, to be shipped for the British market. Spring-tides rise 9 feet, and neap-tides 5 feet.

Tignish Head lies on the eastern side at the mouth of the Tignish River. There are two patches of stone with 3 and 5 feet water, at the distance of half and three-quarters of a mile N.N.E. ½ E. from Tignish Head, but as these are within the 2-fathom line, they require no farther notice. At 4½ miles south-eastward of Tignish Head is Boss Spit, which dries out to its edge, and is so steep that there are 17 feet of water close to its outer point; you should keep in 3½ fathoms when passing this spit. At 3¼ miles south-eastward of Boss Spit is Coldspring Head, which lies N.N.W. ½ W., 8 miles from Lewis Head.

In the entrance to Verte Bay are some shoals, which should be avoided when navigating this part of the Strait of Northumberland, viz., Aggermore Rock, Laurent Shoal, Heart Shoal, and Spear Shoal.

The *Aggermore Rock*, with 18 feet least water, lies N.E. ½ E., 2⅔ miles, from Coldspring Head, with a deep-water channel between; but in a N.W. by N. direction, towards Cape Laurent, not more than 3½ fathoms will be found at low water, and in some places less.

Laurent Shoal, of rock and sand, with 16 feet least water, is about three-quarters of a mile long, by half that in breadth. On the shoalest part Cape St. Laurent bears N.W. by N., 2⅓ miles, Indian Point N.E. by E. ¼ E., and Coldspring Head S.S.W. ½ W. There are 4¼ fathoms close to the east side of this shoal.

Heart Shoal, with 9 feet least water, lies S.W. by S., 1¼ miles, from Cape Spear. There are 15 feet between it and the shore.

Spear Shoal lies about a mile E.S.E. from Heart Shoal, and has a patch of rock with 10 feet least water near its east end, and from 15 to 18 feet in other parts. It is a bank of sand and stones, resting on sandstone, about a mile long, from east to west, and one-third of a mile broad. When approaching this shoal from the eastward the lead gives little warning, as there are from 3¾ to 4¼ fathoms close to it on that side; but by coming into no less than 4½ fathoms, vessels will avoid it, as they pass it to the southward. From the shoalest part, Cape Spear bears N.W. by N., 1⅔ mile, and Indian Point N.N.E., 2¼ miles. Between it and Cape Spear there are 3¼ fathoms.

From Coldspring Head to Lewis Head the bearing and distance are S.S.E. ½ E., 8 miles, and at 2¼ miles E. by S. of Lewis Head is Pugwash Point. Between Lewis Head and Pugwash Point is a bay into which the Rivers Philip and Pugwash run, the former in its western side, and the latter in its eastern. *Lewis Reef* extends 2½ miles to the N.E. from Lewis Head; its outer part is composed of detached rocky patches, on which there are from 14 to 18 feet of water, with a greater depth between them; but the inner part is very shallow, and has as little as 6 feet of water at the distance of 1½ mile from the shore.

Philip River disembogues to the southward of Lewis Head, and between the latter and Bergeman Point. There is a dangerous bar of stones and sand across its mouth, so situated as to leave only a very narrow and crooked channel of 8 feet at low water, through which the new vessels, built up the river, and brought down light, are taken with difficulty on their way to Pugwash, where they load, and where, also, the lumber and produce brought down this river are taken to be shipped. Boats can go up about 9 miles, and there are increasing settlements along the borders of this river.

PUGWASH HARBOUR lies at the head of the bay of that name and to the southward of the point. There is a depth of 14 feet at low water on the bar, in ordinary spring-tides, within which is a crooked channel, from 50 to 100 fathoms wide, leading to the harbour: to sail through this channel requires the aid of a pilot, who will be obtained in answer to the usual signal. The harbour is a land-locked basin, having a depth of nearly 7 fathoms, in which vessels loading lie moored in

perfect security. There is high water at Pugwash, F. and C., at 10h. 30m.; ordinary spring-tides rise 7 feet, and neap-tides 4 feet. The rate of the tidal streams seldom exceeds a knot in the roadstead, and in the entrance of the harbour it is generally less than 2 knots.

A reef runs out from Pugwash Point three-quarters of a mile N.W. by W., and dries out about half that distance. At ¾ of a mile off the point to the North and N.E. there are rocky patches, with 11 and 12 feet of water, and there are others farther to the eastward, a full mile out from the shore: there is also uneven rocky ground, with a less depth than 4 fathoms, 2 miles off-shore, and which renders it unsafe for a stranger in a large ship to go within the 5-fathom line.

The roadstead is sheltered by Philip Bar and Lewis Reef from West and N.W., and by Pugwash Reef from East and N.E. winds. It affords excellent anchorage, in from 16 to 19 feet at low water, sand and clay bottom; but exposed to winds between N.N.W. and N.N.E., although the shallow water outside prevents any sea from coming in sufficient to endanger a vessel during the summer months. To take Pugwash Road, you ought to have a pilot, but if unable to get one, then, should you be to the northward, in 5 fathoms, you must bring the English Church steeple, at Pugwash, so as to be seen over, and only just within, the west extreme of the low cliff of Fishing Point, the east point of the bay, bearing S. by E. ⅓ E.; running with these marks you must not open the church in the least to the westward of the point, until the south point of Philip River (Bergeman Point) bears S.W. by W., or until the water decreases to 3½ fathoms: you will then be close to the N.W. end of the Pugwash Reef; now change your course to S.S.W., three-quarters of a mile, when you may anchor, in 16 or 18 feet at low water, with Fishing Point E. by S. ½ S., distant about half a mile, or you may lie in 14 feet, half a mile farther to the southward.

At 9 miles E.S.E. from Pugwash Point is situated Cape Cliff, and 3 miles farther to the S.E. is Oak Island. The coast between is unbroken and terminates in Point Mackenzie, which is separated from Oak Island by sand-bars and a gully for boats nearly dry when the tide is out. Oak Island is about a mile long, and has Jerry Island half a mile westward of it, on the north side of Fox Bay, just within Point Mackenzie. To the southward of Oak Island a bay runs in westerly about 2 miles, to Mullin Point, which point separates Fox Bay on the north-west from Wallace Harbour (formerly Ramsheg) on the south-west. Fox Bay runs in 3 or 4 miles to the north-west, with a channel through flats of tenacious red clay and weeds, which are nearly dry at low water. In this channel are 3 or 4 fathoms of water; but a depth of 8 or 9 feet is all that can be carried over the bar at low water in ordinary spring-tides.

WALLACE HARBOUR.—This harbour is the best on the coast, excepting Pictou, and has 16 feet over its bar at low water of ordinary spring-tides, which rise 8 feet, so that it is capable of admitting very large ships. The entrance, which is W.S.W. ½ W., 2½ miles from Oak Island, and between two sandy points, named Palmer and Caulfield Points, is 2 cables' lengths wide, and 6½ fathoms deep; above this the channel is crooked and difficult, although it is 160 fathoms wide. A pilot is always, therefore, necessary, and may be obtained by making the usual signal. It is high water, F. and C., at 10h. 30m.; spring-tides rise 8 feet, neaps 5 feet, and their velocity does not exceed 1½ knot. When approaching Wallace Harbour from the northward, Oak Island should have a berth given it of nearly a mile; or keep in 5 fathoms, to avoid the reefs off its east side.

From Oak Island to the eastern point of Saddle Island the bearing and distance are S.E. by E. 6 miles. This island is small and low, and joined to the shore by shoals drying at low water; from its eastern point a dangerous reef extends about a mile, and has on it a rock named the Wash-ball, dry at low tide. To clear this reef on the north side, bring Treen Bluff just open north of Saddle Island bearing W. ½ N., and you will avoid it in 4 fathoms. A frequent use of the lead should be made when in the vicinity of the reef, and a nearer approach should not be made than 6 fathoms on its eastern side.

From Saddle Island the bearing and distance to Cape John are S.E. by E. ⅔ E., 5 miles. Within this line of bearing the coast-line bends inwards and forms a large bay named Tatamagouche, in which are several harbours and anchoring places.

TATAMAGOUCHE BAY, OR, AMET SOUND.—Immediately outside the entrance

of this bay are Amet Islet and Shoals, and the Waugh Bank, which render the bay rather difficult of access. The islet is small and flat at the top, and covered with coarse grass. It is about 20 feet above the sea at high water, and was formerly much larger than at present. Shallow water extends 300 fathoms to the westward from the island, and may be cleared in not less than 3¼ fathoms if the English steeple at the River John be not shut in behind the western side of the cape of the same name; but large ships should stand in only to 6 fathoms, and take notice that in every other direction shallow water extends from the island to a far greater distance. The shoals extend nearly 4 miles eastward of the island, and 2 miles to the south-eastward toward Cape John. In both directions are rocky patches of 5 or 6 feet, at rather more than a mile from the island; but there are not less than 16 feet beyond the distance of 2 miles, although there is a patch of that depth at fully 3 miles to the eastward of the island. The marks for this latter patch are the north extremes of Amet Islet and Treen Bluff in one, bearing W. ¼ N., and Cape John S.W. ½ S. The northern side of these shoals is very steep, and should not be approached by a large ship in the night-time nearer than 10 fathoms.

The *Waugh Bank* is to the westward of Amet Islet. It is about 1¼ mile long, with soundings of 2 to 5 fathoms, and from its position and steepness is very dangerous, so that it should not be approached from the northward nearer than 7 fathoms, that side of the shoal being the shallowest and steepest. To clear it on the N.E. side in 5 or 6 fathoms, bring the eastern extremes of Amet Islet and Cape John in one, bearing S.E. ½ S., or the western side of Cape John and the English Episcopal steeple at the River John in one, bearing S.S.E. ⅜ E.; and, on the S.E. side in 4 fathoms, the eastern extreme of Mullegash and Chambers Points in one, S.W. ¾ S. Chambers Point is low and at times difficult to distinguish, on account of the high land behind it.

Cape John, the northern point of the bay, is about 40 or 50 feet high, and has a reef extending from it about 4 cables' lengths, on the inner part of which are two rocks always above water. This reef is steep-to, especially at its western part, where there are 7 fathoms close-to, being deeper here than anywhere else. From the north side of the cape shallow water extends half a mile to the depth of 3 fathoms, rendering it necessary for vessels to keep in not less than 4 or 3½ fathoms. Within the cape is John Bay, which runs 4 miles to the S.E., and as far as the entrance of the river is clear of danger, yet the shoals from its shores are steep and should not be approached nearer than 3½ fathoms. Sandy shoals occupy the head of the bay, drying out half a mile. On the bar of the river there is only a foot at low water; here several ships are built.

Nearly in the centre of Tatamagouche Bay is *Brulè Peninsula*, which is rather low and wooded, and has a reef extending from it 400 fathoms towards the N.W., partly drying at low water, and so bold that the lead gives but little warning of approach. Off the point are some shoals extending 1⅓ mile to the northward; which are rocky with irregular soundings, and have 9 feet least water not far from their outer edge. They should be approached very cautiously, as there are 4 or 5 fathoms close to the edge. Within the peninsula is the harbour, having upon its bar a depth of 14 feet at low water; when inside the bar there are 19 feet for a short distance, but the channel soon becomes very narrow, running between flats of mud and weeds. The anchorage outside the bar, in 3¼ fathoms, muddy bottom, is considered the best sheltered place in the sound; to anchor in the best berth bring Brulè Point N.W. by N., Conn's white house* S.W., and Cape John N.E.

Tatamagouche Harbour is to the westward of Brulè Peninsula, lying between it and Mullegash Point. It is 2⅓ miles wide at its entrance, and runs in 7 miles to the westward, affording good anchorage everywhere, on a bottom of soft mud, but large ships cannot go far up. From 5 fathoms at the entrance the depth decreases to 3 fathoms 1½ mile up the bay, and to 2 fathoms at 4 miles, the remainder being all shallow, part drying at low water. A rock, with only seven feet on it, lies 3½ cables' lengths off the northern shore, 2 miles within Mullegash Point; Amet Island and Mullegash Point touching, bearing E.N.E., clear it to the southward, distant 120

* This stands a short distance back from the southern shore of the harbour, and is at present (1847) the only two-storied house in that place, and has a large barn close to it. It bears S. by W. 1¼ mile from Brulè Point.

fathoms. A stranger may safely approach to 3 fathoms at low water; but in entering keep well over to the northward, to avoid the Brulè Shoals, extending from Brulè Point. On the N.E. side the English Church steeple at the River John, just open to the northward of Long Point, bearing S.E. ½ E., clears them in 3 fathoms. The north and N.W. sides are very steep, but the east and S.E. sides may be approached by the lead.

Tatamagouche River is in the S.W. corner of the bay, 5 miles within the entrance. Several vessels visit this river for lumber every year; they anchor off it in 11 or 12 feet at low water, and lie aground on soft mud, as the tide falls, without injury. High water, full and change, at 10h.; spring-tides rise 8 feet, neaps 5 feet.

When approaching Tatamagouche Bay from the eastward between Cape St. John and Amet Island, keep nearest the cape to avoid the Amet Shoals, that narrow this channel to about three-quarters of a mile. When coming in to the westward of Amet Island, the passage between Amet Island and the Waugh Shoal to the westward is a full mile wide, and from 6 to 10 fathoms deep; the leading mark for running through this passage is Brulè Point and Conn's House in one, bearing S. by W. The western passage into Amet Sound, between Waugh Shoal and Saddle Reef, is a mile wide, with 5 to 8 fathoms in it. When bound to John River, or Tatamagouche, pilots may be obtained by making the usual signal.

From Cape John the coast trends S.E. by E. ½ E., 15 miles to *Caribou Island*, and is free from dangers. The island is about 4½ miles long, and appears at a distance like several islands, but a nearer approach shows these to be joined together by sand-bars. A reef extends from the eastern point of the island towards the N.N.E., nearly three-quarters of a mile, and is composed of large stones; it is very dangerous, as there is deep water very near its north point and eastern side.

Caribou Island with the main encloses a harbour available for small vessels. At its entrance is a small island, named Doctor Island, on either side of which there is a passage. From the eastern point of the island a reef runs to the eastward 1¼ mile, and partly dries at low water. To the southward of this and two-thirds of a mile from the same point of the island are the Seal Rocks, dry at low water, from which the shallow water, forming the bar of *Caribou Harbour*, extends to Logan Point, the north point of Pictou Bay. Caribou Harbour is about 6 miles long and one broad, and is too shallow and difficult of access for any but small vessels.

PICTOU ISLAND lies to the north-eastward of Caribou. It is about 4¼ miles long by about 1½ broad, of moderate height, and well-wooded. Its western point may be passed in 3 fathoms within half a mile, but on either side of it there are rocks, nearly dry at low water, extending 300 fathoms from the shore. The north shore of the island should not be approached nearer than 9 fathoms, particularly at night, but the southern shore may be approached to 5 fathoms. Off the east point of the island a dangerous reef runs nearly a mile to 5 fathoms, and partly dries at low water; near it are 9 fathoms, so that great caution is required when sailing in its vicinity, particularly at night, and with a flood-tide; this point is now distinguished by a square white lighthouse, exhibiting a fixed light at 52 feet above the sea, visible 12 miles.

From Pictou Island a bank extends to the west and south 3¼ miles, upon which are 2¾ to 6 fathoms, on a bottom of sandstone thinly covered with sand, gravel, mud, and broken shells. On the northern part of this bank is a series of rocky patches, named the Middle Shoals, having 11 feet least water. They are about 1¼ mile in extent, in a W. by S. direction, and may be cleared to the northward in 4 fathoms by bringing Roger Point (the middle point on the south side of Pictou Island) and the west point of the same island in one; but large vessels should not approach them on that side nearer than 7 fathoms.

Between Pictou Bank and the shoals extending from Caribou Island is a channel about half a mile wide with a sufficient depth of water for the largest vessels. It is somewhat difficult to navigate, being so crooked that no leading marks direct through the whole extent, nevertheless the following instructions by Admiral Bayfield may be of some service; he says that, "the safest mode of running through this channel to the westward, is to strike soundings in 6 or 7 fathoms on the edge of the shoal water off Doctor Island, and follow it to the N.W. until Mackenzie Head is just shut in behind Logan Point, bearing S. ¼ W. Then steer from those marks, keeping the Head just shut in, and they will lead across the deep water, and afterwards along the western edge of the Pictou Island Bank out to sea. If the wind were strong from

the S.W. with an ebb tide, it would be preferable to keep on the weather side of the channel, in which case the edge of the shoal water off Doctor Island should be followed further to the N.W., until Logan Point is only a little open to the eastward of Doctor Point, bearing S. ¼ E. Those points in one lead along the east side of Caribou Reef at the distance of a cable, and in 4 fathoms. Keep Logan Point a little open, and it will lead clear out to sea in not less than 4½ fathoms. The same marks and directions, taken in a reverse order, will enable a vessel to take this channel from the northward or westward, it being only necessary to add, that she should not haul to the eastward until the Hawksbill is well shut in behind Caribou Point, nor open out the former again after having shut it in, until the lighthouse at Pictou is open to the southward of Cole Point; the lighthouse and Cole Point in one, bearing S.W. by W. ¾ W., being the mark for clearing the south extreme of the Pictou Island Bank in 5 fathoms."

PICTOU HARBOUR, about 3 miles to the southward of Caribou, is in every respect the finest on the southern shores of the gulf, being capable of receiving ships of any burthen; here are coal-mines, valuable quarries of building stone, and a finely settled country in its neighbourhood. Pictou has been declared a free warehousing port; and its trade is very considerable in lumber, coal, and the fishery. The trade of this port appears to be rapidly increasing, and the town of New Glasgow, up the East River, in the neighbourhood of the coal-mines, promises to be of considerable importance. Coasters from all parts of the gulf resort to Pictou; and its exports have amounted to £100,000 in one season. A steamer runs regularly between Pictou and Quebec; and there is a regular communication by land with Halifax.

The town of Pictou stands on the north shore of the harbour. The houses are crowded together along the shores of a small bay, but all except the church steeples are hidden from vessels entering the harbour, by Battery Point, which shelters them from easterly winds. Many of the dwelling-houses are of stone, and the population upwards of 2000. Opposite the town the harbour expands into three arms, at the heads of which are the East, West, and Middle Rivers; the two latter are only used by boats.

The north point of entrance is Logan Point, and the south point is Mackenzie Head, which may be easily recognised by presenting a sharp-pointed cliff of clay and sandstone 40 feet high. Off Mackenzie Head to the N.E. by E., nearly a mile, is a shoal of 16 feet least water, with no safe passage between for large vessels; the marks to clear it at one cable's length to the eastward are Caribou and Doctor Points in one bearing N. by W. ¼ W., and to the northward at the distance of 200 fathoms, the lighthouse in one with the town point at Pictou bearing W. ¼ S. From Mackenzie Point to the lighthouse the water is shallow for about half a mile out; about half-way between is Boat Harbour, the entrance to an extensive lake.

On the opposite or northern side of the harbour reefs extend from Logan Point fully half a mile, which may be crossed in 14 feet at low water by bringing the lighthouse and Cole Point in one, bearing S.W. by W. ¾ W., but vessels should not approach nearer than 4 fathoms. From Cole Point, a mile to the southward of Logan Point, a reef also extends out about one-third of a mile, and continues westward to the commencement of London Beach on the north side of the entrance to the harbour.

The *Lighthouse*, an octagonal wooden structure, on the southern side of the entrance, is painted vertically with red and white stripes, and exhibits a fixed light at 65 feet above the sea, visible 11 or 12 miles; a small *red* light is shown below the lantern; neither are lighted when the navigation is encumbered with ice. When the lighthouse is brought in one with Cole Point, bearing S.W. by W. ¾ W., it clears the reef off the east end of Pictou Island, half a mile; and also the southern extremity of Pictou Island Bank in 5¼ fathoms. If beating into the harbour, tack, when standing to the northward, the moment the light begins to disappear behind Cole Point. If running in, keep the light W.S.W., till you get soundings in 5 fathoms, at low water, off Logan Point, and follow that depth 1½ mile to the S.W., taking care not to bring the light to the northward of West. Here you may anchor in the roads till daylight.

The pilots at Pictou (who are generally active, experienced men) are always on the look-out for vessels; but should you not meet with one, there is good anchorage in Pictou Roads in 5 to 6 fathoms, with the lighthouse bearing West. Here you might wait for daylight to obtain a pilot; a stranger, particularly in a large ship, should not

attempt to cross the bars without one, although there is good water on both bars. The outer bar has 21 feet at low water, bottom of sand; crossing this you fall into 4, 5, or 6 fathoms for about a mile, when you suddenly shoal again to 18 or 19 feet on the inner bar; this bar is also of sand, about a cable's length wide, and distant 4 cables' lengths from the lighthouse; when across this inner bar the water continues deep to the entrance of the harbour. There is very good anchorage between the bars, but it is open to N.E. winds. From the lighthouse to the anchorage off the easternmost wharves at Pictou, the channel of the harbour is direct, nearly one-third of a mile wide, deep enough for the largest ships, and clear of danger.

To enter Pictou Harbour with a fair wind, when without Mackenzie Shoal, bring the lighthouse and town point of Pictou in one, bearing 1 or 2 degrees to the southward of West; or, which is the same thing, with Smith Point, the extreme of the land, on the same side beyond the town. Run with these marks on, until Logan and Cole Points come in one, bearing N.E., when instantly sheer a little to the northward, sufficient to bring the town point in one with the north extreme of the Sandy Spit. Keep the last-named marks exactly in one, until the Roaring Bull comes in one with Mackenzie Head, bearing S.E. by E. ½ E., when change the course smartly, and run from those marks, keeping the Roaring Bull just in sight, until the north extreme of Moodil Point (the first point on the south side within the lighthouse) opens to the northward of the Sandy Spit; then haul to the westward, at first towards the S W. extreme of London Beach, and afterwards so as to pass midway between it and the Sandy Spit into the harbour. With a beating wind a pilot is indispensable. It is high water, full and change, at the lighthouse, at 10h.; spring-tides rise 6 feet, neaps 4 feet. With good tides you will carry 4 fathoms over the bar.

Mr. George Peacock, Master of H.M.S. *Andromache*, 1839, gives the following account of Pictou Roads and Harbour:—

"Pictou is a place of rising importance; its timber trade has rather fallen off of late, but the coal-mines in the immediate neighbourhood have opened a very brisk trade in that article, which occupies some hundreds of vessels, of all dimensions, in the coasting and foreign trade, many of which carry from 500 to 700 tons, chiefly trading to the United States.

The best anchorage in Pictou Roads is in 7 fathoms, with the following bearings:—the lighthouse West; Point Caribou North; and the Roaring Bull Point S.E.; the latter is a high bluff, pointing to the southward, and has a small white house on the slope. From this bluff a reef extends North three cables' lengths, and from Point Caribou another, West, nearly half a mile. Here you are sheltered completely from the S.E. by the south, round to north, and, in a great measure, as far as N.E. by the island and reefs off it. In fact, the only winds that throw in any sea, are those from the S.E. by E. to N.E. by E., and they are fair for running into the harbour, which may be attempted, in almost any weather, by ships drawing from 18 to 20 feet.

To run in, bring the small white house to the left of the lighthouse, and close to it, on with a long building appearing off the starboard point of the harbour, (it lies to the left of a small but remarkable gap in the N.W. land,) bearing W. ½ N.; keep them on until Roaring Bull Point begins to be shut in with the east land, by which time you will be pretty close to the low sandy beach on which the lighthouse stands; then haul over to the northward, toward a bushy tree, standing by itself on the north shore, until you are in mid-channel between it and the lighthouse point. You may then proceed up the harbour, West, in mid-channel, toward the point with the building above mentioned, and rounding it at a convenient distance, anchor at pleasure, off the town, in 7 or 8 fathoms. Or, if only taking the harbour for shelter, you may anchor anywhere within the lighthouse, in mid-channel. The holding-ground is excellent, and you are here secure from all winds.

On the inner bar, at high water, spring-tides are from 22 to 23 feet of water; on the outer bar, 5 fathoms; between the bars 7 and 8 fathoms. The tide on full and change, flows at 10h., springs rise from 6 to 8 feet, according to the wind; neaps rise from 3 to 5 feet. The lighthouse, which is painted red and white, in vertical stripes, is very conspicuous, and shows a fixed light.

In order to proceed in the night, with a vessel of easy draught, bring the light to bear W. ½ N. and steer for it until within about 50 fathoms off it, and then haul round it gradually, at about that distance, not going into less than 3 fathoms.

Pictou appears to me to be a harbour very easy of access, and very capacious.

The roadstead is certainly one of the best in the world, the bottom clay and mud. There is anchorage under Pictou Island, but it is by no means to be recommended. This island may be seen from a ship's deck 4 or 5 leagues off; a reef extends from its east end about a mile, and from its west end more than half-channel over. The three-fathom bank, marked in some charts, it is said does not exist."—*Nautical Magazine*, 1839, p. 146.

From the lighthouse the distance to the Roaring Bull, a cliffy point enclosing a small lagoon, named Chance Harbour, is 4 miles in an easterly direction. From this point a reef runs out 300 fathoms. Two miles hence in the same direction is Little Harbour, a place fit only for boats, as, although of some extent, it is full of shoals. In the middle of the bay is Roy Island, off the north side of which there is a dangerous ledge of 9 feet; there is also a reef of sandstone, partly dry at low water, running out from Colquhoun Point, half a mile to the eastward. As all these dangers have 5 fathoms close to them, vessels should be careful not to stand into less than 6 fathoms along this part of the coast.

Merigomish Harbour, east of Little Harbour, has 14 feet over the bar, and a depth sufficient for large vessels; but it is so intricate and difficult of access that a pilot is indispensable. On the eastern side of the harbour is the island of the same name, 3¼ miles long and 1⅓ broad, rising to the height of about 150 feet, the eastern end of which is united to the shore by a sand-bar. Hence to Cape George the coast runs E. by N. 27 miles, and is bold and free from danger, and contains no harbour for shipping. The country is covered with settlements, and the hills rising from the coast attain an elevation of 1100 feet at 2 or 3 miles from the shore side.

At 8½ miles from Merigomish is the village of Arisaig with its wooden pier, affording shelter to boats and shallops in easterly winds, but none in winds from between North and West. East of this pier, about a mile, is a remarkable rock named the Barn. Three miles farther eastward is Malignant Cove and Brook, where there is good landing for boats; this place will be known by the Sugar Loaf Hill in its rear, which is 680 feet above the sea.

Cape St. George has a square white lighthouse upon it, exhibiting, at an altitude of 400 feet above the sea, a revolving light, which attains its greatest brilliancy every half minute, and is visible about 25 miles; it is only shown during the navigable season. Under the cape there is good anchorage in 10 to 7 fathoms, sheltered from westerly winds.

About 10 miles S. by W. from Cape George is the entrance of the harbour of Antigonish, where small vessels load gypsum or plaster, of which there is abundance in the neighbourhood; but the harbour is so shoal, that they are obliged to complete their cargoes outside the bay, in very indifferent anchorage. The rivers falling into this harbour run through many miles of fine country, and the population of the neighbourhood is considerable.

At Pomquet Island, 6 miles south-eastward of Antigonish, ships of any size may load in safety. In sailing in, when from the northward, leave the island on the starboard hand, keeping close to a rock which appears 5 or 6 feet above the water. This rock is steep-to, and lies off the east end of the island; without it, at the distance of three-quarters of a mile, are some dangerous sunken ledges. After passing the rock, a bay will open on the starboard hand, which you should stand into till you are shut in with the island, where there is anchorage in 3½ fathoms, at about half a mile from the island.

From Pomquet Island to Cape Jack the distance is 7¼ miles; between are two small bays, named Great and Little Tracadie. Off Cape Jack there is a dangerous shoal at the distance of about three-quarters of a mile, which must be carefully avoided when running for the Gut of Canso; outside it the water soon deepens from 4½ to 7 fathoms.

Between Cape Jack and the entrance of the Gut of Canso, there is a small harbour, named Havre Bouche, in which small vessels of 15 to 50 tons are occasionally built. Hence to the Gut of Canso the shore is lined by a ledge of rocks to a short distance out.

Between Cape George and the Gut of Canso, in fine weather, the winds draw from the southward and south-eastward; and from the Cape to Pictou from the southward. In general they are variable near the cape.

GUT OF CANSO.—The lighthouse on the western side of the northern entrance of the Gut of Canso, stands in lat. 45° 41′ 49″ N. and long. 61° 28′ 58″ W.; it is painted white, and stands 120 yards from the shore. The light is fixed at 110 feet above the level of the sea, and can be seen at the distance of 18 miles, or between Cape George and Henry Island, and is thus very useful when approaching the gut from George Bay. Under the lighthouse there is good anchorage with off-shore winds.

The Gut of Canso is the passage separating Breton Island from the coast of Nova Scotia. It is the best passage for vessels bound to and from Prince Edward's Island and other places, as it is shorter and has the advantages of anchorage in case of contrary winds and bad weather. Its length is about 5 leagues, and breadth about three-quarters of a mile. The east side is low with beaches, but the west side is mostly high and rocky, particularly that part named Cape Porcupine. The deepest water is on the western shore; but both shores are bold-to and sound, excepting three sunken rocks lying near the eastern shore, one of which lies about midway between the southern entrance of the gut and Ship Harbour, and nearly a cable's length from the eastern shore; the second lies near the western side of Gypsum or Plaster Cove, about half a cable's length from shore; and the third about 100 fathoms without Bear's Island, the S.E. part of the gut: these rocks have 6 or 8 feet water on them. There are several places, hereafter described, which afford excellent anchorages, with a moderate depth, and out of the stream of the tide, which generally sets in from the southward, but very irregularly, being much influenced by the winds. After strong N.W. winds, which happen daily during the fall of the year, the water in the Gulf of St. Lawrence is rendered low, which causes the current to run northward through the gut, at the rate of 4 or 5 knots, and the contrary happens after southerly winds.

Mill Creek is on the Nova Scotia side of the gut, near its upper end, and here you may stop a tide, or lie wind-bound if it does not blow hard. Keep the creek open and anchor in 8 or 10 fathoms on the south side of the creek, within a cable's length of the steep rocks. It will be necessary to carry a hawser on shore to the rocks, to steady the ship, as the tide runs in eddies. Fresh water may be obtained at low tide.

Nearly opposite Mill Creek is Balaches Point, off which at nearly a cable's length from shore there is a sunken rock, readily distinguishable by the tidal eddy. Half a mile southward from hence is Gypsum Cove, from which Cape Porcupine bears nearly S.W. When sailing in keep near the middle, and let go your anchor in 10 fathoms. You will find sufficient room for swinging round, in 7 fathoms.

Ship Harbour, half-way down the gut on the eastern side, is a good harbour for vessels of 10 feet draught, and very useful to those bound northward, as it has a good outlet. If bound in from the southward, give the starboard side a berth of a cable's length (it being flat), and run in until you shut in the north entrance of the gut, and anchor in 4 or 5 fathoms, soft bottom. You may obtain wood on the Breton side, and water on the opposite shore, at Venus Creek. The port side of this harbour is bolder-to than the starboard side, and has the deepest water. Without the harbour, one-third from the Breton side, you may anchor in 9, 10, to 13 fathoms, loose ground, in the strength of the tide.

Good anchorage may be had at Holland Cove, nearly opposite Ship Harbour, in 6 or 7 fathoms, muddy bottom, and out of the strength of the tide.

At the south end of the gut there is a fine bay, on the Breton side, named Inhabitant Bay, in which there is good anchorage and shelter. When sailing in, keep near Evans Island to avoid Long Ledge, stretching off the north shore, after passing which, run up in mid-channel, keeping the lead constantly going. Tarbalton and Sea-Coal Harbours, the former on the east and the latter on the west side of the bay, each afford good sheltered anchorage in 4, 5, and 6 fathoms, on a muddy bottom, and are very convenient when N.W. winds prevail at the south entrance of the gut. When bound southwards, if caught with a southerly wind, you will find good anchorage under Tarbalton Head, where you may ride safely in the bay, in 5 or 6 fathoms.

The following directions have been given for the gut, and may still be found useful:—

"*If from the northward*, you may proceed through the gut in safety, by keeping nearly in the mid-channel, there being no danger until you arrive off the south point,

named *Eddy Point*;* but, from this point extends a long spit of sand, with large round stones, which must be left on the starboard side, at the distance of half a mile from what may be seen above water. The race of the tide will serve to guide you from it.

Having passed the spit of Eddy Point, you may steer to the S.S.E. until abreast of an island which appears covered with green spruce-trees, having red bark. Hence you proceed straight out to sea.

Be cautious of running in the direction of a dangerous steep rock, named the Cerberus Rock, with only 10 feet of water over it, and on which the sea breaks occasionally. This rock lies with the centre of Verte or Green Island in a line with Cape Hogan, or Iron Cape, on the Isle of Madame, at the distance of about 5 miles from Cape Argos, and about 3¼ miles from Cape Hogan. It may be cleared on the west side by bringing Eddy Point in one with Bear Island.†

Near the end of the gut, within a mile of Eddy Point, there is a middle ground of 7 to 12 fathoms, on which ships may stop a tide in moderate weather. To the westward of this ground there is a depth of 18 fathoms, and to the eastward of it 20 to 25 fathoms. With the wind inclining from the southward, steer in nearly West, and keep the lead going, until you shoalen to 11 fathoms, when you may let go your anchor.

If wishing to anchor in Inhabitant Bay, bring the farm that is opposite to Bear Head open with Bear Head bearing W.S.W. This mark will lead you clear, and to the southward of the Long Ledge, and in the mid-channel between it and the steep rocks on the east or opposite shore: at the same time take your soundings from the Long Ledge or north shore, all the way till you arrive at Flat Point; then keep in mid-channel between Flat Point and the island opposite, from the N.E. side of which runs off a spit or ledge of rocks, at the distance of a cable and a half's length; then port your helm, and run under Island Point, and come-to in 5 fathoms, muddy bottom. Up the River Trent are plenty of salmon, in the season, and there you may find wood and water.

The leading mark to clear the steep rocks of Steep Point is, to bring the peninsula in a line over the point of Tarbalton Head, bearing South or S. ¼ E. until you open the island to the northward of Island Point; then haul up for the outer harbour, and come-to in 10 or 12 fathoms, muddy bottom.

Those who are bound up the Gut of Canso, and taken short by a North or N.W. wind, at the south end of the gut, and who are desirous of good and safe anchorage in 10 to 12 fathoms of water, may come-to on the north side of Bear Island; but, should it blow hard, to a gale of wind, down the gut, this anchorage is not altogether so secure as a careful master or pilot would wish. You must then leave the road of Bear Island, and sail round the south end of Bear Point, giving a berth to the spit that runs off it, of 3 cables' lengths, and haul round to the N.E. into Sea-Coal Bay, and come to anchor in 4, 5, or 6 fathoms, sand and muddy bottom.

The marks for anchoring are, Bear Head in a line over Flat Head, bearing W.S.W., or W. by S., and Cariton Cliffs to bear N. by E. or North, in 5 or 6 fathoms, where you will have a good berth and lie sheltered from the W.N.W. and North winds. Here is sufficient room to moor ten or twelve ships of the largest class.

Ships coming down the Gut of Canso, which may have passed Eddy Point, as far as Cape Argos, and caught with a S.E. to a S.S.W. wind, and cannot hold their own by beating to windward, may bear up and come to anchor in Tarbalton Bay, under Tarbalton Head, where they may ride safely in 5, 6, or 7 fathoms of water, muddy bottom. The marks for anchoring in the bay are, to bring the peninsula point in a line over Tarbalton Head, bearing South or S. ½ W.; or a point of land inland, a little up in the country, from Cape Argos shore, with pine-trees on it, open to the eastward of Red Head; or the said point of land with pine-trees on it, over the pitch or point of Tarbalton Head; you are then sheltered by the rocks, or spit that runs from Tarbalton Head, in 4 to 5 and 6 fathoms of water, and will ride very safely on good holding-ground. But should the wind shift to the S.W. or N.W., you must take up your anchor, and beat out of the bay into Chedabucto Bay, and proceed on

* On this point there is a square lighthouse, painted white, with a black diamond on the seaward side, which exhibits two fixed white lights, visible about 8 miles.

† This rock is awash at low water, and is, we believe, marked by a spar buoy.

your passage to the southward. Should the wind over-blow, at S.W., so as to prevent your beating to windward into Chedabucto Bay, you may come to an anchor in Eddy Cove, bringing the low part of Eddy Point to bear S.S.E. or S. by E., in 5, 6, or 7 fathoms of water, taking care to give the ship sufficient cable, lest you drive off the bank into deep water, from 15 to 20 fathoms."

BRETON ISLAND is a large island of a triangular form. Its length is about 100 miles, and its breadth about 85 miles. In the centre of the island there is a large lake, named the Bras d'Or, which penetrates a distance of nearly 60 miles, and occupies a large portion of its area; by this lake the island is nearly divided into two parts. The entrance to the Bras d'Or is formed into two passages, named the Great and Little Entrance, by the long narrow island of Boulardrie; the latter channel is impracticable for ships, and is seldom used even by boats. The shores of this lake or gulf contain numerous bays and small harbours, in which timber is shipped for Great Britain. The open part of it forms four large arms, of which the southern and the largest contains many small islands, and terminates at the isthmus of St. Peter, which is about 900 yards wide, and separates the waters of the Bras d'Or from those of the Atlantic at the Bay of St. Peter.

The island is generally mountainous, and the high land appears in many places close to the coast, and on the shores of the Bras d'Or. Cape Ensur..6, 20 miles north of St. Anne's Harbour, is said to be 1800 feet above the level of the sea.

In that part of the island which is south-east of the Bras d'Or granite prevails. In all parts of the island are found mica-slate, clay-slate, and sienite; transition limestone, greywacke, gypsum, and coal, are very generally distributed. The principal coal field lies between Miray Bay and Sydney Harbour, and contains the Sydney and Bridgeport mines, from which increasing quantities are annually shipped.

The N.W. coast of Breton Island, from Cape North to Cape Linzee, is, in the inland parts of the country very high, but in some places it falls gradually towards the shore. Sailing along on this side of the island, from the northward, you may safely stand in to the distance of two leagues from shore. Having arrived off Cape Linzee, and proceeding along the Breton shore towards the Gut of Canso, care must be taken to avoid the Judique Bank and Shoals, the former of which has $4\frac{1}{2}$ fathoms over it, and lies about 6 miles southward of Henry Island, at 3 miles from the shore; the Shoals are situated nearly 3 miles further to the southward, and extend $1\frac{1}{2}$ mile from the land. The mark for clearing all these dangers is the high land of Cape Porcupine just open (bearing S. $\frac{1}{2}$ E.) of the east shore of the gut.

The eastern coast of the island is commonly made by navigators bound from Europe to Nova Scotia; its appearance on the sea-shore, and also to some distance up the country, is barren and rocky; and the tops of the hills, being much alike, have nothing remarkable to distinguish them. The lighthouse and town of Louisbourg serve, however, to point out that part of the island on which they stand. A lighthouse, painted white, now stands on the east point of Scatari Island, and exhibits a revolving light, visible one minute and invisible half a minute. A lighthouse, showing a fixed light 160 feet above the sea, stands on Flat Island, upon the eastern side of the entrance to Sydney, and may be easily distinguished from that on Scatari Island, by its being painted vertically red and white. Louisbourg Lighthouse stands on the eastern side of the entrance to the harbour, and in order to distinguish it from the other lighthouses, and to render it conspicuous when the back land is covered with snow, it is built square, painted white, with vertical black stripes on either side. The coast continues rocky on the shore, with a few banks of red earth, which appear less barren.

The N.E. coast of Breton Island, between Scatari Island and Cape Dauphin, is low; but, from Cape Dauphin to Cape Ensumé, it is high. Between Scatari Island and the entrance to Port St. Anne, a vessel may stand in-shore, to 15, 10, and 7 fathoms in clear water with gradual soundings.

Blancherotte, or White Cliff, is situated on the south-eastern coast of the island, and is a remarkable cliff of whitish earth in lat. 45° 39′, and long. 60° 25′. At 4 miles westward of it is a small woody island, at upwards of a mile from shore, and off the little harbour of Esprit. The land hence to Madame Island is generally low, and presents several banks of bright red earth, with beaches between them. Albion Cliff, on the south side of Madame, is rocky, remarkably high, and precipitous. Of the interior of Breton Island, like Newfoundland, but little is known.

When approaching the island, from any direction, too much caution cannot be exercised on account of the currents setting alternately about Cape North according to the winds at sea, both from the westward and eastward.

CAPE NORTH is a lofty promontory at the N.E. extremity of Breton Island, in lat. 47° 2′ 40″, and long. 60° 25′ 23″. The entrance into the Gulf of St. Lawrence is formed by this cape and Cape Ray, and the latter bears from the former E.N.E. ¼ E., distant 18½ leagues; the depth of water between, excepting near the Island of St. Paul, is generally above 200 fathoms.

From Cape North to *Ashpee Harbour* the course and distance are S.W. ½ S. 6 miles. In this harbour vessels may find shelter, and good anchorage may be obtained behind the island, where boats can land, and water and provisions be obtained. For want of knowledge of such an establishment, many have been obliged to endure both hunger and fatigue unrelieved.

At two miles to the southward of Ashpee Harbour is situated Aralsow Cove, from which the coast runs 2 miles to the eastward, and then trends S.S.W., 11 miles, to Naganish Island, between which and Cape Ensumé a good bay is formed, fully 2¼ miles deep, with 4 to 9 fathoms in it. Another deep bay lies on the south side of Cape Ensumé, nearly as large as the former, with 7 to 10 fathoms in it; but they are both open to easterly winds. From Cape Ensumé to Black Point the course and distance are S.W. by S. 20 miles. Black Point forms the western, and Siboux Islands the eastern side of the entrance to St. Anne's Harbour.

ST. ANNE'S HARBOUR.—This harbour was named by the French, when in their possession, Port Dauphin, and is a very safe and spacious harbour. It has but a narrow entrance and by those who are acquainted a depth of 16 feet can be carried over the bar, but by strangers perhaps not more than 12 or 13 feet. When in mid-channel of the entrance, you will have from 9 to 12 fathoms, and when over the bar and in the harbour from 5 to 10 fathoms, muddy bottom. On the north side the land is very high, and ships-of-war may lie so near to the shore that a water hose may reach the fresh water, and a ship may be loaded in one day, from a cascade which runs from the top to the rock. The Guernsey and Jersey men dry their fish on this beach.

Mr. Backhouse has given the following directions for St. Anne's Harbour:—"After you have passed the Siboux or Hertford Isles, on the east side of the entrance, keep the south shore on board, if the wind be to the S.E.; and as you approach Passage Point, bring Cape Ensumé, or Cape Smoke, which lies to the northward, nearly on with Black Point; steer with these marks in one, until you are nearly abreast of Passage Point, off which lies a sunken rock, of 6 feet water, and opposite to which begins the spit of St. Anne's Flat, and the narrowest part of the channel. Now keep a small hummock up in the country, nearest to the shelving high land to the westward of it, which hummock is on the middle land from the water side, in a line over the fishing-hut, or fishing-stage erected on the beach: this will lead in the best water, until you enter the elbow part of the beach. When advanced thus far, keep the opening open (about the size of two gun-ports) which makes its appearance up the S.W. arm. This opening looks like two steep cliffs, with the sky appearing between them, and will lead you between the beach and the south shore, in mid-channel, through 9 and 10 fathoms, and past the beach-point, off which a spit stretches to the S.W. about 2 cables' lengths. Having passed this spit, come to anchor in either side of the harbour, in from 5 to 10 fathoms, muddy bottom, and sheltered from all winds."

LA BRAS D'OR.—There are two entrances to this lake or inlet, the Northern or Great Entrance, and the Southern, or Little Entrance: they were thus described some years since by Mr. Thomas Kelly, pilot of the place; but the names of the places he refers to are generally unknown, and cannot be applied to any publication extant.

Sailing Directions for the Grand Bras d'Or Entrance.—"Ships from the southward must give Point le Conie a berth of about 2 miles, and steer from thence for the eastern end of the inside of Bird Island, until you bring M'Kenzie Point and Carey's Beach in one. Make for the Black Rock Point until you have Messrs. Duffus's Store just open of Point Noir; then steer for Gooseberry Beach until you bring a clearing on Duncan's Head over M'Kenzie's Point. It is to be observed, that ships coming in with the tide of flood must keep Point Noir well aboard, to avoid the eddy and whirlpools on the north side of the Gut, which has various settings. You must then

steer for Point Jane, to keep the fair stream of tide as far as the Round Cove, where there is fair anchorage in 7 or 8 fathoms, good holding-ground. When abreast of the Round Cove, steer over for Duncan's Head; and when abreast of this head, steer for Long Beach, until you bring a tall pine-tree on the Upper Seal Island in one with a notch or valley in the mountain. You will then make for the point of the Upper Seal Island, which will carry you clear of the shoals on the islands, as also the South Shoal, or Middle Ground. The marks for this shoal are a white rock in the bank for the eastern end, and a white birch-tree for the western end. When abreast of the western end of this shoal you may keep the middle, there being no difficulty until you come to Red Head. If bound to Kent Harbour, after doubling the Red Head, steer for a remarkable red bank, covered with small bushes, until you bring Mr. Duffus's house entirely open of the beach which is on the island. There is a depth of from 4 to 5 fathoms in this harbour, and good holding ground.

Directions for that arm of the Lake named St. Patrick's Channel and up to Whookamagh.—From Red Head you will steer well over for the Duke of Kent's Island, to avoid a mud-shoal which runs off from M'Kay's Point. When abreast of the western end of the Duke of Kent's Island, sail for Wassaback Head, until abreast of Stony Island. Then steer for Cranberry Head so as to clear a shoal lying off from Wassaback Head; when abreast of Cranberry Point, sheer well over for the Bell Rock, to avoid a shoal lying on the south side of the channel; when abreast of the Bell Rock, steer for Green Beach, observing to keep Baddock River shut in until you are well up with Green Beach. You will then steer for a beach on the south shore until you cross the opening of the Narrows; you may then sail through the Narrows, keeping the middle until you come to the western end, when you must haul round the southern shore (beach), keeping the south shore until abreast of the Plaster Cliffs: you are then clear of all, and in the Whookamagh Lake.

Of the Anchorage through the Bras d' Or.—The first anchorage is the Round Cove, where you may ride in 7 or 8 fathoms. You may anchor, in 5 or 6 fathoms, in the centre of the harbour, on a middle ground; the marks for which are, to bring the Table Island a handspike's length open of Black Rock Point, and Point Jane bearing N.W. On the north side of the harbour is good anchorage as far up as the Lower Seal Islands, and to the eastward of the Upper Seal Islands, in 5 fathoms, and to the westward of the same islands in 7 fathoms. There is no other place of anchorage from this to the Big Harbour, where you may ride in 7 or 8 fathoms; from thence you may anchor at any time.

Setting of the Tide in Grand Bras d' Or.—The first quarter-flood sets from the northward, directly over the shoal, last quarter W.S.W., being directly through the channel, and meeting with the tide coming over the shoal, sets toward the Black Point, which occasions it to shoot across the Gut, making a number of whirlpools and strong eddies on each side of the channel, which slacks two or three times during the tide. The first quarter-ebb sets over the shoal to the northward; last quarter directly through the channel. N.B.—The tide of ebb is the fairest s tting-tide. The tide runs in until half-ebb, and out until half-flood, in regular tides; but the winds make a great alteration; N.E. winds make high tides, and S.W. neaping them; also tides running out with S.W. winds until high water, and in until *low* water with N.E. winds. Tides rise four feet, unless affected by winds. High water ten minutes past eight o'clock, full and change. Bearings by compass.

Observations.—Messrs. Duffus's store is a fishing establishment. Mr. Duffus's house is on Kent Island, formerly Mutton Island. Mr. Thomas Kelly piloted the ship Pitt, of St. Kitt's, burthen nearly 400 tons, laden with timber, and drawing about 18 feet of water, safely through the foregoing described channel from Kent Harbour.

SYDNEY HARBOUR, formerly named Spanish River, the entrance to which lies 4 leagues S.E. of that of St. Anne's, is an excellent harbour, having a safe and secure entrance, with soundings, regular from sea, in 5 fathoms. In going in, give the two points of the entrance a berth of two or three cables' lengths, approaching no nearer than 6 or 5 fathoms. The soundings are regular to each shore to 5 and 4 fathoms. In the inner part of the entrance, Beach Point and Ledge, on the south side, are steep-to; but Sydney Flats, on the opposite side, are regular to 4 fathoms. When past the Beach Point, you may run up the River Dartmouth to the S.W., and come to anchor in any depth you please, in from 5 to 10 fathoms, fine muddy bottom.

This harbour is capable of containing the whole navy of Great Britain. On Flat Point without the east side of the entrance is the lighthouse before alluded to, in lat. 46° 16′ 12″, and long. 60° 7′ 22″ W. It is an octagonal tower of wood, 51 feet in height, painted vertically red and white. It exhibits a brilliant fixed light, at 70 feet above the level of the sea, which may be seen in clear weather at 14 miles distant. Fish of various kinds, cod, haddock, &c., are caught on the coast in great abundance. The tide in the harbour flows at 9h., and rises 6 feet.

South-east of Sydney Harbour are Indian Bay and Windham River, both places of anchorage, and fit for small vessels to run into, although little frequented at present; southward of these is Morien, or Cow Bay, at the northern point of which is *Flint Island*, where there is a lighthouse exhibiting a light with a bright flash every 15″ at a height of 65 feet above the level of the sea, and visible from all points of the compass at a distance of about 12 miles; lat. 46° 11′ 5″ N., long 59° 45′ 50″ W.: there is a passage between this island and the main, with 14 fathoms water, but this should be adopted with the greatest caution, on account of the numerous rocks under water that are scattered about. This bay is open to the north-eastward, and its head is encumbered with an extensive shallow flat, which dries at low water.

Miray Bay is farther to the southward, its entrance being between Cape Morien and the Island of Scatari; the bay is wide, and runs in 3 leagues, branching off at its upper part into two rivers; there is deep water in it, from 20 to 6 fathoms, and clear from dangers, but it affords no shelter for shipping.

SCATARI ISLAND lies in about the lat. of 46° N.; its length from east to west is nearly 2 leagues, and its breadth about one league; there is a channel between it and Cape Breton leading into Miray Bay, but it is too hazardous for strangers, and frequented only by those coasters who are well acquainted with its dangers.

On the east point of this island, which is also the easternmost land of Breton Island, is a lighthouse, in lat. 46° 2′ 18″, and long. 59° 40′ 18″ W. The tower is painted white, and exhibits a revolving light, at about 90 feet above the sea; visible one minute, and invisible half a minute, alternately. A boat is kept to render assistance to vessels in distress, and a gun to answer signals, when requisite. The light should never be brought to bear eastward of N.N.E. nor to the southward of S.S.W., nor should it be approached nearer than 1½ mile.

As vessels from Europe frequently first make the land about Scatari Island, the revolving light on the eastern point will be found of great service. It appears, by the late survey of the St. Peter's Bank, that in lat. 46° N. the western edge of the bank, in 40 fathoms, pebbles and broken shells, lies E.S.E., or (East, true,) 111 miles from the lighthouse on Scatari Island. A bank with 8 fathoms on its centre is said to have been found by Capt. McGarth, of the fishing schooner *Martha*, and to lie about 24 miles south-eastward of Scatari Island, in lat. 45° 47′ N. and long. 59° 17′ W. The depth in this neighbourhood has hitherto supposed to have been about 70 fathoms, which throws some doubt upon the correctness of this report. Should such a bank really exist, it will prove of great importance, and amply repay a careful examination.

LOUISBOURG HARBOUR, situated on the S.E. side of Cape Breton Island, to the westward of Scatari Island, is very easy of access and egress. In availing yourself of it be careful to avoid the Nag's Head, a sunken rock, on the starboard hand going in. The east part of the harbour is the safest. The inhabitants consist of a few fishermen only. Water is plentiful, but wood is scarce. The Nag's Head Rock lies nearly one-third from the lighthouse point, and has no more than 3 feet on it at low water. The port side going in is the boldest.

There is a lighthouse on the north-eastern side of the entrance to the harbour at 60 fathoms in-shore. It stands on the site of the old French lighthouse, (which was succeeded by a beacon,) and shows a fixed light, at 85 feet above the sea, visible about 16 miles from off Cape Portland to the south-eastern extremity of Cape Breton. The lighthouse (which is a square building,) is painted white, with vertical black stripes on either side, in order to distinguish it from other lighthouses, and to render it conspicuous when the back land is covered with snow.

The following remarks were written some years since, and may still be of service to vessels bound to Louisbourg:—When coming from the eastward, they should bring the light to bear W. by N., or more northerly, before they run for it; and from westward, N. by E., or more northerly, in order to clear Green Island and the Ledges,

which lie three-quarters of a mile S. by W. ½ W. from the light. When in the entrance of the harbour, which is nearly half a mile wide, with the light bearing N.N.E. two or three cables' distance, steer W.N.W. for nalf a mile, to avoid the Nag's Head, a sunken rock on the starboard side, bearing W. by N. from the light. The N.E. arm of the harbour affords the safest anchorage. The light of Louisbourg bears about S.S.W. ½ W. from the revolving light on Scatari Island.

GABARUS BAY.—From the entrance of Louisbourg to Guyon or Portland Isle, the course is S.W. by W., and the distance more than 3 leagues. Between lies a spacious bay, named Gabarus Bay, having a depth of from 20 to 7 fathoms. Off Cape Portland, the south point of this bay, lie the Cormorants, a number of dangerous islets and rocks. About 4 leagues to the westward of Gabarus Bay is the Forked Harbour, a narrow winding inlet, which small vessels may run into, and lie land-locked, and 5 miles south-westward of this is the remarkable white cliff, already noticed, named Cape Blancherotte. The shore now winds to the westward, to Cape Hinchinbroke and the Isle of Madame.

ARACHAT, OR AROCHETTE.—Arachat Harbour, on the S.W. side of the Isle of Madame, has two entrances: the N.W. one, being very narrow, ought never to be attempted without a leading wind, as there is not room for a large ship to swing to her anchors, should she be taken aback. When going in, give the ledge extending westward from Seymour or Jerseyman Island a good berth, not approaching it nearer than 8 fathoms, and then keep as near as possible in mid-channel. To enter by the S.E. passage, steer for Point Marache, rounding it in 8 fathoms, at about two cables' lengths off; keep that shore on board, at nearly the same distance and depth of water, until the church bears North; you will then see a small house (the Dead House) on the top of the hill behind the church; bring that on with the east end of the church, and then steer in that direction; you will thus pass midway to the eastward of the Eleven and Five-feet shoals, and also to the westward of the Fiddle-Head Shoal. Proceed with this mark on, until a red house on Fiddle-Head Point comes on with the dark rocky extreme of the point, bearing E. ½ S.; you will then be to the northward of the Twelve-feet Shoal, and may haul up to the westward, where you will find excellent anchorage on soft mud, opposite to the low sandy beach on the middle of Seymour Island, in 10 fathoms. When making for Point Marache care is necessary to avoid the Cerberus, already described, and a shoal with 3 fathoms over it, lying about ⅝ of a mile S.W. by W. from the said point.

On Point Marache, the eastern side of the entrance to Arachat Harbour, there is a square white building which shows a fixed light at 34 feet above the sea, visible about 8 miles. From it Cranberry Lighthouse bears S. 3° E.; Winging Point S. 5° W.; Ragged Head, north shore of Chedabucto Bay, N. 79° W.; and Little Arachat Head N. 40° W.

The general appearance of the coasts of the Gut of Canso has been already described. On proceeding towards this strait from the Atlantic it should be remarked that the Isles of Canso, on the Nova Scotian side, are surrounded with many low white rocks and breakers. The south shore of Chedabucto Bay is iron-bound and steep-to; its north shore is of red cliffs and beaches. Of the Gut of Canso, from the southern entrance northward, the western shore, throughout, is high, rocky, and steep; the eastern shore low, with beaches. From the north end of the gut, the eastern shore to Jestico, or Port Hood, is distinguished by high, rocky, red cliffs. The opposite shore has several remarkable cliffs of gypsum, or plaster, which appear extremely white. Cape George, the western extremity of George's Bay, is iron-bound and very high; its summit being estimated to be 600 feet above the level of the sea.

PORT HOOD, situated on the western side of Breton Island, is a safe harbour for frigates with any wind, but particularly from the S.W. to S.S.E. round by the northward; the anchorage is in 4 to 5 fathoms, mud and sandy bottom: here you may get both wood and water. The leading mark going in is Cape Linzee on with the highest sand-hills that are on the N.N.E. side of the beach, bearing N. by E. or N.N.E.: these kept in a line will lead you clear of Spithead, in 4 to 6 fathoms. On the opposite shore is a long and broad flat, stretching from the shore three-quarters of a mile, named the Dean, to which you should not approach nearer than in 4 fathoms. On the south side of the entrance there is a white square lighthouse, which shows a fixed light at the height of 54 feet, visible about 10 miles, appearing red on the north and bright on the south side.

At 6 miles S. by W. from Henry Island, the outermost of the islands forming Port Hood, and 13½ miles E. by S. ¾ S. from Cape George, is a small shoal of 4½ fathoms, named the *Judique Bank*, distant from the shore of Breton Island about 2¾ miles. It is about three-quarters of a mile in extent, and has 8 to 7 fathoms all round it. Within this shoal, to the southward, are some reefs, which join the shore, from which the outermost part is distant 1½ mile; they are named the *Judique Shoals*, and have 5 to 6 fathoms just off their outer edge. To go clear of all these dangers, bring the high land of Cape Porcupine, on the west side of the Gut of Canso, open of the eastern shore of the Gut, bearing S. ½ E.

At 4 miles E. by N. from Cape Linzee is the Mabou River, which is wide at the entrance and continues so fully 4 miles, where two streams fall into it. On the eastern side of this river stands the village of the same name, from which to Cape Mabou the bearing and distance are N.E. 6 miles.

Seal Island, Sea Wolf, or Margaree Island, lies 12 miles N.E. by E. from Cape Mabou, and is about 1½ mile in length, bold-to, and distant 2 miles from the shore, having 16 fathoms in the channel between. Upon the middle or summit of the island stands a white square tower, showing a fixed light at an altitude of 298 feet above the sea at high water, visible about 21 miles; lat. 46° 21′ 30″ N., long. 61° 15′ 33″ W. To vessels in dangerous proximity to the island, the light may become obscured by the abrupt cliffs forming its shores.

At 7 miles, E.N.E., from Sea Wolf Island is the western point of Salmon River, and at 9 miles N.E. from Salmon River is Cape Beaque. At 3 miles to the north-eastward of the Cape is the entrance to an inlet, which runs in south-westward, 4 miles, near the head of which is a settlement; its entrance is about half a mile wide, on the eastern side of which is Chetecan Harbour, fit for small vessels. From Cape Beaque to Cape St. Lawrence the bearing and distance are N.E. by E. 31 miles, and from Cape St. Lawrence to Cape North, the bearing and distance are E.S.E. 8 miles. Between these last two capes the land curves in to the southward: near the head of this bight are 12 fathoms water.

CHEDABUCTO BAY.—Although Chedabucto Bay is not in the limits of this section, yet as it is necessarily traversed by vessels sailing through the Gut of Canso, it will not be considered out of place to make a few remarks on it here.

The bay is wide and spacious, and bold-to on both shores and free from danger. On its southern side, which is high and nearly straight, are Fox Island and Crow Harbour. Fox Island is small and lies near the shore.

At the southern entrance of the bay, a lighthouse stands on *Cranberry Island*, eastward of Cape Canso. It is an octagonal tower 60 feet high, striped red and white horizontally, standing in lat. 45° 19′ 54″, and long. 60° 55′ 29″ W.; it exhibits two fixed lights, one above the other, at altitudes of 40 and 75 feet above the sea, visible respectively 9 and 15 miles.

Fox Island Anchorage is one of the greatest mackerel fishery stations in North America during the months of September and October. When sailing in you must pass to the westward of Fox Island, giving it a berth of a quarter of a mile, as there are rocks about it both above and under water, with 3 and 4 fathoms close to them. You may anchor in from 4 to 10 fathoms, with the west end of the island bearing from E.N.E. to N.N.E., keeping about midway between the island and the main. The water shoals gradually to the bar, which extends from the island to the shore, and has not more than 6 or 7 feet on its deepest part, drying in one place about one-third of the distance from the island to the main: with northerly and with westerly winds, the fishing vessels ride to the eastward of it in from 2 to 4 fathoms, and shift to the westward with easterly winds.

Crow Harbour, on the south side of Chedabucto Bay, is capable of containing ships-of-war of the fifth-rate, merchant vessels, &c. The bottom is good, and the mark for entering it is to keep the beacon, on the south side of the harbour, in a line with a remarkable fine tree upon the high land, which will lead you clear of the Corbyn Rocks, and also of Rook Island Rock, which lies 25 fathoms off the N.W. point of Rook Island.

Milford Haven, or the *Harbour of Guysborough*, at the head of the bay, is impeded by a bar, but a vessel of moderate size may pass over it. Within the bar vessels lie in perfect security; the tide, however, sets in and out with great rapidity. The town is, at present, a place of little trade; but it is protected by a battery. A

small fixed light is shown, visible 8 miles, from the west side of the entrance, near Peart Point: it is 30 feet high, and the lighthouse, which is of wood, is coloured white.

From Manchester round the north shore of Chedabucto Bay, the shores are full of settlements. On the northern side of Chedabucto Bay you will see several red cliffs; this shore is sandy, with regular soundings in the middle of the bay: the water is deep, from 25 to 35 fathoms.

TIDES.—The tide has great strength in the Gut of Canso, running in the narrowest part, at Cape Porcupine, at a rate of seldom less than 4 or 5 miles an hour. Here it flows, on the days of full and change, at 9½h.

Along shore past Havre Bouche and Antigonish, the tide sets towards Cape George, and, rounding that cape, proceeds towards the N.W.

The tides are materially affected by the winds; and it has been found that, at times, the stream in the Gut of Canso has continued to run one way for many successive days.

PRINCE EDWARD'S ISLAND.

THIS island is a distinct government, though subordinate to the British commander-in-chief in North America. It is well settled, and possesses a good soil, fit for all general purposes. The island is exempt from fog, while the surrounding coasts of Nova Scotia, Breton Island, and New Brunswick, are frequently covered with it. The climate is generally healthy and temperate, and not subject to the sudden changes of weather experienced in England. The winter here sets in about the middle of December, and continues until April; during which period it is colder than in England; generally a steady frost with frequent snow-falls, but not so severe as to prevent the exertions of the inhabitants in their various employments. The weather is generally serene, and the sky clear. In April, the ice breaks up, the spring opens, the trees blossom, and vegetation is in great forwardness. In May, the face of the country presents a delightful aspect. Vegetation is so exceedingly quick, that, in July, pease, &c. are gathered which were sown in the preceding month. The country is generally level, or in rising slopes, and abounds with springs of fine water, and groves of trees, which produce great quantities of excellent timber, &c. The greater part of the inhabitants are employed in farming and fishing. Charlotte Town, situated between York and Hillsborough Rivers, on the southern side of the island, is the seat of government.

The coast forms numerous harbours, many of which are, however, fit for small vessels only. The principal loading ports are, on the eastern side, Cardigan Bay, or the Three Rivers, and Murray Harbour: on the S.E., Hillsborough Bay and River; Bedeque Bay on the southern side; Richmond Bay and Holland Harbour on the north.

SOUTHERN COAST.—CAPE EAST, composed of red sandstone, is a cliff from 50 to 60 feet high. From the point a reef runs off nearly a mile to 5 fathoms, and two-thirds of that distance to 3 fathoms. Great caution must be exercised in approaching this reef, as the flood tide sets strongly over it from the northward, and thence to the south-westward, at the rate of 2½ knots. Great ripplings are frequently caused by this tide off the point; and a large ship at night or in dark weather, should not approach the point nearer than 20 fathoms. The sea is very heavy off this point in N.E. gales. To the southward of the point, between it and the outlet of East Lake, there is good riding with northerly winds.

To the southward of Cape East there is an extensive bank of 5 to 7 fathoms extending in a N.N.E. and S.S.W. direction, about 5¾ miles. It is named the *Milne Bank*, and is about 5¾ miles long, with very irregular soundings: towards its southern end, and close to the outer edge, there is a shallower part of 4½ fathoms, extending for a distance of 1½ mile, which bears between South and S. by E. 4¼ to 5¾ miles from the cape. The mark for the northern end of this shallow ridge is Souris and Dean Points in one, bearing W. by N., and for the southern end, Swanton and Chepstow Points, W.N.W. ½ W.; these marks lead over the ends of the bank in 5 fathoms, but are so distant that they cannot be seen unless it is very fine weather. All round the

bank there are 10 to 15 fathoms. It has steep edges, and the sea breaks heavily in strong N.E. gales.

CARDIGAN BAY, or the Three Rivers, lies between Boughton Island and Panmure Island; it is the common entrance to three rivers; namely, Cardigan River, Brudenell River, and Montague River. In the former there are from 7 to 3 fathoms of water, and in the others from 4 to 2 fathoms. George Town stands on a peninsula between the rivers Brudenell and Cardigan. In these places many large ships load with timber. There is anchorage without, in Cardigan Bay, in from 10 to 6 fathoms, where a pilot may be obtained.

On *Panmure Head*, the south point of the entrance, stands an octagonal shaped and white wooden lighthouse, 49 feet high, which exhibits a fixed light at an elevation of 89 feet above the sea, visible 14 miles; if kept open eastward of Terras Point it will clear the reef extending from Cape Bear.

Fisherman's Bank is composed of sandstone, thinly covered with stones, gravel, and broken shells. It is 3 miles long from east to west, by $1\frac{1}{3}$ mile broad, within the depth of 10 fathoms; but the shallow central part, of from 4 to 5 fathoms at low water, covers scarcely half that space. The least water, 4 fathoms, bears from Cape Bear, the nearest land, E.S.E. $\frac{1}{2}$ E. $7\frac{1}{2}$ miles; and there is another patch with 5 fathoms three-quarters of a mile farther eastward. It has deep water all round it. In a gale, this bank should be avoided by large ships.

MURRAY HARBOUR lies close to the north-westward of Bear Cape; and the entrance is narrow and shoal, difficult of access, and with not more than 10 feet of water. Vessels from the eastward, and bound to Murray Harbour, must avoid approaching too near to Bear Cape, as a ridge of rocks extends out a full mile from it.

The bar of Murray Harbour is exceedingly dangerous, having only 10 feet at low water; and easterly winds send in such a heavy sea, that breakers extend all across the bay, upwards of 2 miles. The channel in is buoyed and beaconed, but a pilot is at all times necessary to ensure safety. From Bear Cape to the Wood Islands, a distance of 13 miles, the coast is all clear; and near the shore is anchorage in 3 to 4 fathoms.

About a mile S.W. by W. from the Wood Islands are the *Indian Rocks*, some very dangerous rocks, extending $1\frac{3}{4}$ mile from the shore. There is almost always a rippling on those parts which dry, by which their position is generally indicated. Spring-tides run 3 knots near these rocks, and rise 6 feet; and it is high water, full and change, at 9h. 45m. At night come no nearer their S.E. part than 13 fathoms, as there are 10 fathoms within a quarter of a mile of their southern edge. There is a narrow channel between these rocks and the shore, but of no use to shipping.

The *Rifleman Rocks* lie $4\frac{1}{3}$ miles to the westward of Indian Rocks, and are one of the greatest dangers in the strait. There are only 5 feet water on the shoalest part, and from its outer point, in 3 fathoms, Prim Point Light bears N.N.W. $\frac{1}{2}$ W. 8 miles. This shoal should always be approached with great care, particularly in foggy weather, as the soundings are very irregular, and there are 16 fathoms within half a mile of it, with a less depth farther out. At night, Prim Light should not be brought to the westward of N.N.W.

The Pinette River, 4 miles eastward of Prim Point, has a rocky dangerous bar, and is fit only for small schooners; the bar is nearly a mile without the entrance, and the shoals run off a mile farther. These shoals are dangerous, and should not be approached nearer than 6 fathoms at low water. At Pinette it is high water, full and change, at 10h.; springs rise 8 feet, neaps 5 feet. There are only 2 feet water on the bar at low tide.

HILLSBOROUGH BAY.—Prim Point, the south-east point of Hillsborough Bay, is low, with cliffs 10 to 15 feet high. The lighthouse upon it is 100 yards within the Point, and consists of a white brick circular tower 50 feet high, and shows a fixed light, 68 feet above the level of the sea at high water, and may be seen at a distance of about 13 miles, which is of great service to vessels coming from the eastward, in guiding them clear of the Pinette and Rifleman Shoals, and enabling them to enter Hillsborough Bay in the night. The west extreme of St. Peter's Island bears from it N.W. $\frac{1}{3}$ W., $7\frac{3}{4}$ miles; and the west end of Governor's Island N. $\frac{3}{4}$ E., 5 miles.

A reef of a forked shape runs out to the westward from Point Prim, and has upon

it uneven soundings. Its north point, in 3 fathoms, bears N.W. by W. ½ W., 2 miles from the lighthouse, and its western point W. by S., 1¼ mile; but to the depth of 5 fathoms it extends out nearly 3 miles. The marks to clear the extreme and in the latter depth are the Block-house Point and the square tower of the Presbyterian Church at Charlotte Town in one, bearing N. by E. ½ E. As these objects cannot always be seen, you must attend to the lead, and you may safely round the reef by it, and the bearing of the lighthouse, in 3, 4, or 5 fathoms, according to your vessel's draught of water.

St. Peter's Island, on the N.W. side of Hillsborough Bay, is about 3 miles in circumference. You may approach the south side of the island within 1½ mile; but there are extensive shoals running off to the eastward from the island, in an E. by N. direction, 3 miles; this spit dries 2 miles from the island. Off the end of the spit lies the Spit-head, a rocky shoal of 8 feet. Close to the eastward of the Spit-head there is a beacon-buoy. The western side of the channel trends North, 2¼ miles from the Spit-head buoy to the Block-house Point at the entrance of Charlotte Town Harbour. About half a mile S. by W. ¼ W. of Block-house Point lies the Trout Rock, of 7 feet, having 14 to 16 feet around it; the Government-house and Block-house Point in one just clears its east side.

Governor Island lies E. by N., 4½ miles from St. Peter's Island, and S. by E. ½ E., 4 miles from Block-house Point. It is low, partly wooded, and surrounded by shoals to some distance off. This island, lying near the centre of the bay, forms, with its shoals, the eastern side of the entrance of the channel to Charlotte Town Harbour, as well as the western side of the channel leading to Orwell and Pownell Bays. The Governor Shoals extend to the S.W. from the island, and have some shallow patches a considerable distance from the island; to the westward these shoals run off nearly 2 miles, to 5 fathoms. The Fitzroy buoy lies in 4 fathoms, a cable's length within the end of the shoal; it lies with Battery Point and the square tower of the Presbyterian Church in one, N. by E. ¼ E. You may pass on either side of this buoy; but very large ships should pass to the westward of it. The Squaw Shoal, of 12 feet, lies 2 miles N. by W. from the N.W. part of Governor Island, and must also be passed to the westward. Huntly Rock, of 12 feet, lies S. by W. ½ W., 1¾ mile from the west end of the island, and must be passed on the west side when going to Charlotte Town.

Hillsborough Bay contains within it the principal harbour and capital town. Charlotte Town is situated on the northern bank of the Hillsborough, a short distance within its entrance, and at the point where the deep water approaches nearest to the shore. While the navigation is open, a small fixed light, visible 9 miles, is shown all night from the roof of the block-house on Block-house Point, the west point of entrance, at about 35 feet above the level of the sea. It is high water here on the days of full and change at 10h. 45m., and the rise in ordinary spring-tides is 9½ feet, and in neap-tides 7 feet. Ships generally lie off the wharves of the town, where the channel is nearly 10 fathoms deep, and 280 fathoms wide.

A pilot should be procured by strangers bound to Charlotte Town, but if one cannot be obtained outside, the bay may be entered and good anchorage will be found N.W. of Governor Island, until one be obtained. Approaching from the westward with a fair wind, bring the N.W. point of Governor Island and Pownell Point to touch, bearing E. by N., and run from them until the Presbyterian Church comes in one with Block-house Point, bearing N. by E. ½ E.; when you must steer N.E. by E. or N.E. ½ E., according as it may be flood or ebb tide, until the west side of Government-house and Battery Point come in one, bearing N. ½ E.; these latter marks lead up the deep-water channel to Sea Trout Point, at the entrance of the harbour. If the leading marks cannot be made out, follow the southern and eastern edge of the St. Peter's Shoals in 5 fathoms up to the Spit-head Buoy, then anchor.

When approaching from the eastward with a fair wind, the Rifleman Reef must be avoided by attending to the soundings in the chart, and by not bringing the light on Prim Point to bear to the westward of N.N.W. A large ship should round Prim Reef by the lead in 10 fathoms; a smaller vessel may go nearer with attention to the soundings. When the light bears to the southward of E. by S. ¼ S., (the vessel being in not less than the low-water depth of 10 fathoms,) or when the north side of Prim Island bears E. by S., the most northern point of the reef will be past, and the course across the bay must be North or N. ½ E. at night or in thick weather; the object

being to strike soundings on the southern edge of the bank off St. Peter's Island, and then to follow it to the north-eastward in 5 fathoms, until about 2 miles within the Fitzroy Rock, where there is excellent anchorage off Governor Island, and where the vessel had better wait for daylight. In clear weather, your course from the outer end of Prim Reef, in 10 fathoms, will be N. by E. ½ E., about 5 miles. To run farther up, a pilot is indispensable.

The bearing and distance from St. Peter's Island to Cape Traverse are N.W. ¼ W. 20 miles. The shoal water extends off from the land a considerable distance all along this part of the coast, but the lead affords sufficient warning, and in 5 fathoms you will be fully half a mile off the outer edge. Tryon River is situated about 5½ miles to the eastward of Cape Traverse, and small schooners enter it with the assistance of the tide, which rises from 6 to 8 feet. The Tryon Shoals dry out 1½ mile off shore, between Tryon and Brockelsby Rivers, and their S.W. extreme, in three fathoms, bears S. by W. ½ W., distant fully 2 miles from Tryon Head, the nearest part of the shore. To clear the S.W. point of the shoals in 5 fathoms, at the distance of a long half mile, an excellent leading mark is Carlton Head and Cape Traverse in one, bearing N.N.W. ¼ W. These shoals may be safely approached to any convenient depth, when farther eastward; yet as the tides meet off them, and cause variations in the strength and set of the streams, the lead should never be neglected when in their vicinity. The ebb from Bay Verte frequently sets over towards these shoals, so that a vessel standing along the land with a scant southerly wind will often find herself dropping to leeward towards them much faster than her usual amount of leeway would lead her to expect.

The bearing and distance from Cape Traverse to Carleton Head are N.N.W. ¾ W. 3 miles, and from thence to Sea-Cow Head N.N.W. ½ W. 6 miles. Off these headlands the shoal water does not extend beyond 300 fathoms; but in the bays its 3-fathom edge is sometimes twice that distance from the shore; and as the line of 5 fathoms is sometimes quite close to it, the general rule for vessels at night should be not to approach nearer than the depth of 7 fathoms.

BEDEQUE HARBOUR is situate northward of Sea-Cow Head, and runs in to the eastward between Indian Head and Phelan Point. Indian Point, the south point of entrance, is faced by sandstone cliffs 25 feet high. As the entrance to this harbour is narrow and intricate, a pilot is requisite; although, when inside, there is sufficient water for the largest ships. Until a pilot can be obtained, a vessel should anchor in the roadstead outside, where there is safe anchorage during the summer months in 22 feet at low water, sand and clay bottom, although open to S.W. winds. In approaching from the eastward with an easterly wind, Sea-Cow Head may be safely rounded at the distance of two or three cables, and Graham Head may be passed at twice that distance. It is high water in Bedeque Harbour at 10h., the rise being 7 feet in spring-tides and 5 feet in neap-tides. At Green's Wharf, when the navigation is open, a small fixed light is shown all night from a lantern placed on a pole at the height of 15 feet above the water, visible about 7 miles.

From Sea-Cow Head to Cape Egmont the bearing and distance are N.W. ⅓ W., 14¼ miles; between them is a bank of 3½ to 4½ fathoms, which extends fully 3 miles from the shore; when about midway between the points, you may safely keep along its southern edge in 5 or 6 fathoms. A rock, 30 feet high, named the Dutchman, will be seen about a mile to the northward of Cape Egmont, at a cable's length from the shore. Cliffs of sandstone, 50 feet high, render Cape Egmont a remarkable headland: the cape is bold to the southward; but there is shallow rocky ground, half a mile off shore, to the westward, which should not be approached nearer than 6 fathoms at low water.

At 4¼ miles to the eastward of Cape Egmont are Fifteen Point Church and Village, which stand near the shore and can be seen at a great distance. A low rock above water, named the Little Dutchman, lies at the extremity of the point, one mile to the eastward of the church, and shallow water extends to the distance of a long mile off shore. Sandbury Cove, 9 miles to the eastward of Cape Egmont, is an extensive place, but nearly dry at low water.

The Egmont Bank (4 fathoms least water) is narrow, and 2½ miles long in a S.S.E. and N.N.W. direction. Its northern end bears W.N.W. ¼ W., 5 miles, from Cape Egmont, and its southern end W. ¾ S., 4 miles, from the same headland, and there are as much as 8½ fathoms and a clear channel between it and the cape.

WEST POINT bears from Cape Egmont N. by W. ¾ W., 17 miles; between is

Egmont Bay, which affords excellent anchorage with off-shore winds in from 4 to 7 fathoms, sand and clay; but vessels should not anchor in less than 5 fathoms anywhere excepting on the N.W. side of the bay, because there is rocky ground, with only 3½ fathoms water off the river at its head, lying just within the 5-fathom line, and at the distance of 3 miles from the shore, whilst along the eastern shore 5 fathoms would be too near the edge of the shoals. On the northern shore of the bay, Wolfe and Brae Rivers are sandy places, dry at low water.

The Percival and Enmore Rivers are only fit for boats and small craft; and the approach to them is very difficult. On the east side of the bay, from the entrance of these rivers to within 3 miles north of Cape Egmont, the shallows run off a full mile to the depth of 3 fathoms; 5½ fathoms is near enough for a ship to approach this side of Egmont Bay. Jaques Church, 5 miles north of Cape Egmont, is conspicuously situated.

The West Point consists of sand-hills 12 feet high, and there is good anchorage under it with winds between north and east, in 4 fathoms, bottom of sand. The West Spit runs off in a N.N.W. direction, 3 miles from West Point; on some parts of it there are only a few feet water, on a bottom of sand; the northern part of this trends N. by E., parallel with the shore, with 2½ to 3½ fathoms on it. Between the spit and the land there are from 6 to 4 fathoms, open to the northward, but no outlet to the southward. To avoid this opening when coming from the northward, and to keep without the West Reef, come no nearer the shore than 12 fathoms.

The West Reef is a narrow rocky reef, 4 miles long, in a north and south direction; its soundings are irregular, being from 5 to 2¾ fathoms: the least water near the middle is 16 feet, and there are 18 feet near the south end; this latter part bears N.W. ½ W., 3½ miles from the West Point, and is 2½ miles from the nearest land; its north end in 4½ fathoms is 3½ miles from the land. This reef is very dangerous to ships rounding the West Point at night, or in foggy weather, as the deepest water is near its outer edge, having 13 fathoms close to it in one part. At night, to avoid it with certainty, the soundings should be taken from the main land; and by keeping off the edge of the bank in 9 or 10 fathoms, you will pass 3 miles to the westward of it: near the outer edge of the bank, the tides run sometimes 2½ knots, causing a heavy sea, on a weather tide.

The NORTH POINT is low, with red cliffs. Vessels should always give this point a wide berth at night, or in foggy weather, on account of the reef which runs off from it to the north-eastward fully 2 miles to 5 fathoms, and 1¼ mile to 3 fathoms; without the 5-fathom line rocky uneven soundings extend out to 10 fathoms, sometimes causing a dangerous breaking sea.

From the West Point to the North Point the land trends about N.N.E., 6 miles, to Cape Wolfe, then N.E. by E., 27 miles. This coast is unbroken, and chiefly composed of red clay and sandstone cliffs. The shallow water runs off some of the points a considerable distance, so that large ships at night should keep off in 11 or 12 fathoms, when running along this part of the coast.

NORTHERN COAST.—Along the northern shore of the island the anchorage generally, excepting a few places off the bars of the harbours, is very bad, the bottom being of red sandstone, thinly covered occasionally with sand, gravel, and broken shells. The entrances of the harbours are narrow, between sand-bars, with dangerous bars of sand at various distances from the shore. They are only fit for small vessels, with the exception of Richmond Bay and Cascumpeque, and even these could not be safely run for in bad weather, and with a heavy sea running, at which time the breakers on their bars extend quite across, leaving no visible channel. The northern shore of the island forms a great bay, out of which the set of the tides and the heavy sea render it very difficult to extricate a ship when caught there in N.E. gales, which frequently occur towards the fall of the year, and occasionally blow with great strength and duration, at such times proving fatal to many vessels.

From North Point to Cape Kildare the bearing and distance are S. by W. ½ W. 11 miles. The River Tignish lies about midway between, and has only 2 feet in its entrance at low water, but it affords shelter for fishing-boats. Between North Point and Cape Kildare there are rocky irregular soundings, of 3 to 5 fathoms, frequently extending 2 miles off shore.

CASCUMPEQUE HARBOUR is situated 5 miles S.W. ½ W. from Cape Kildare. Several very high sand-hills, 3½ miles to the southward of its entrance, distinguish

this harbour, as there are no high sand-hills to the northward of the harbour. The entrance is 180 fathoms wide, and there are two sand-bars, with 10 feet on them at low water, upon which account it is absolutely necessary for a stranger to be provided with a pilot. On the north side of the entrance there is a white octagonal wooden tower, from which, at the height of 32 feet, a small fixed light is shown all night during 8 months of the year, visible 8 miles. It is high water here on the days of full and change of the moon at 5h. 40m.; rise in ordinary spring-tides is 3 feet, and in neap-tides 2 feet; but this is not regular, and 12 feet over the bar at high water is all that can be safely reckoned upon on any particular day, unless when strong easterly winds raise the water a foot or more in all the harbours on this coast. At certain seasons the tides are very irregular. The morning tides in summer are much higher than the evening tides, which sometimes disappear, leaving only one day tide during the 24 hours.

RICHMOND BAY is of great extent, running in 10 miles to the S.W., and contains seven islands and a number of creeks and rivers, some of which are navigable for vessels of considerable burthen, and all of them by small craft and boats. Grand River, where there are fine settlements, can be ascended a distance of 7 or 8 miles. There are also settlements at Port Hill, in the N.W. part of the bay within Lennox Island, a settlement on Lennox Island, and large settlements at the head of the bay. On *Billhook Island*, the west side of the entrance, stands a pole with a lantern on it, containing a fixed light, visible about 8 miles, and shown all night during 8 months of the year.

MALPEQUE HARBOUR, situated on the eastern side of Richmond Bay, is very superior to any other on the northern coast of the island. There are generally 14 to 16 feet over its bar at low water, and from 18 to 19 at high water, ordinary springs, with space and depth enough within for any description and number of vessels. The principal entrance is between Fishery or Billhook Island to the northward, and the Royalty Sand, which dries out fully half a mile from Royalty Point. Just within this entrance the anchorage is good and well sheltered.

The West Gully is the other entrance; it lies on the N.W. side of Fishery or Billhook Island, and is so narrow and intricate as to be only fit for boats, or very small craft, although it has 9 feet on its dangerous bar $1\frac{1}{4}$ mile out from the shore.

The Bar of Malpeque runs off from Fishery or Billhook Island, E. by S., $2\frac{1}{4}$ miles; it then runs to the southward, so as to join the shore to the eastward of Cape Aylesbury. This bar is exceedingly dangerous in bad weather, the bottom being sandstone; then all signs of a channel are obliterated by heavy breakers. The northern part of this bar, to the distance of $1\frac{1}{2}$ mile to the eastward of Billhook Island, is very shallow, having in some places only 4 feet at low water.

Vessels may anchor outside the bar, in 7 to 5 fathoms, to wait for a pilot, and all strangers should endeavour to obtain one, and not attempt to take the bar in blowing weather.

The tides run the strongest at the entrance to Richmond Harbour, and here springs run $2\frac{1}{2}$ knots; within the bay they are much weaker. It is high water here on the days of full and change, at 6h.; springs rise about 3 feet, neaps 2 feet. N.E. winds raise the tides, and westerly winds the contrary. The morning tides are the highest in summer months.

Between Richmond Bay and Cape Tryon the coast is nearly straight and free from detached dangers; but a large ship should not approach nearer than 6 or 7 fathoms, as the shallow water runs out a considerable distance. Cape Tryon is a remarkable cliff of red sandstone, 110 feet high; at $1\frac{1}{2}$ mile, S.S.E., from the Cape, is Grenville Harbour.

GRENVILLE HARBOUR.—The entrance to this harbour is one-third of a mile wide, and 3 fathoms deep; it is situated at the north-western extremity of a long range of sand-hills, the highest of which is 55 feet above high-water mark. The harbour is only fit for small vessels, as there is a shifting sand-bar, over which there are sometimes only 5 feet water, and the channel in is narrow. The bar extends out to the distance of two-thirds of a mile from the entrance, and the shallow water one mile, at which distance there are 5 fathoms over sandy bottom.

At 8 miles S.E. $\frac{1}{2}$ E. from Cape Tryon is Cape Turner, the highest cliff on the island, being 120 feet high.

GREAT RUSTICO HARBOUR.—This harbour has two narrow sandy entrances,

on either side of McAuslin Island, which are distant 3 and 5 miles respectively to the S.E. of Cape Turner. Very dangerous shifting bars of 4 to 6 feet, and extending three-quarters of a mile from shore, render this place only fit for small schooners. Two buoys, whose positions are changed as occasion requires, point out the line of deepest water over each of these bars.

At 9 miles S.E. from Cape Turner is Stanhope Point, on which there is a sand-hill 30 feet high. A dangerous reef runs out from it three-quarters of a mile, to the depth of 3 fathoms, and one mile to 5 fathoms. There is only one foot of water on some parts of this reef, at a distance of ½ a mile from the shore.

At half a mile to the westward of Stanhope Point lies the narrow sandy entrance of Little Rustico Harbour, which is only fit for boats.

TRACADIE HARBOUR is situated 13 miles, S.E. by E., from Cape Turner, and 4 miles from Stanhope Point. A remarkable range of sand-hills, 50 or 60 feet high, lies on the east side of its entrance. The bar of sand shifts in heavy gales, and extends out three-quarters of a mile from the entrance, with 5 to 9 feet on it. The place is only fit for small craft, and even they require the assistance of buoys, and favourable weather, to take the bar with safety. Within the sand-bar the harbour is 3 miles wide, and 2½ fathoms deep.

SAVAGE HARBOUR lies 9 miles to the eastward of Tracadie, and has only 2 feet at low water over its bar, and is therefore only fit for very small craft.

ST. PETER'S HARBOUR lies 3 miles farther to the eastward, and is of considerable extent. Although it runs in 7 miles in a S.E. by E. direction, with a depth in some parts of 3 fathoms, yet as its bar of sand has only 5 feet over it at low water, the harbour is only fit for small vessels: the outer edge of the bar, in 3 fathoms, is distant two-thirds of a mile from the shore. The channel through the bar, in which this depth of 5 feet at low water could be carried, is liable to shift in heavy gales. It is high water here on the days of full and change of the moon, at 8h. 30m.; springs rise 4 feet, neaps 2 feet.

From St. Peter's Bay to Cape East the coast runs E.S.E. 33 miles. The shore is unbroken and formed of red sandstone cliffs. There are in general 10 fathoms water within one mile of the shore of this division of the coast; and as the bottom is of sandstone, the anchorage is consequently bad.

NORTHUMBERLAND STRAIT.—TIDES.—Of the tides of the Northumberland Strait, Admiral Bayfield says:—

The principal tide-wave, after entering the Gulf between Cape Breton and Newfoundland, sends off, laterally, waves to the S.W., on either side of the Magdalen Islands. The first of these, which I shall call the eastern wave, coming from between those islands and the western shore of Cape Breton Island, arrives at the eastern entrance of the Strait soon after 8 o'clock, and proceeds to the westward, making high water later in succession from east to west as far as Pictou, which it reaches at 10 hours. At the same nominal hour, but 12 hours later, the other or western wave arrives at Cape Tormentine, having been retarded by the long détour which it has taken to the northward and westward of the Magdalens, and by the great extent of comparatively shallow water which it has passed over in its subsequent progress to the S.W. This wave makes high water later in succession at places along the eastern coast of New Brunswick, as we proceed to the southward; and, after entering the Strait, from N.W. to S.E., contrary to the course of the other or eastern wave.

Thus, it is high water on the full and change days at Miscou at about 2½ hours; at Point Escuminac and the North Point of Prince Edward Island forming the western entrance of the Strait, soon after 4 hours; at the west point of Prince Edward Island at 6 hours; at Shediac 8 hours; and at Cape Tormentine 10 hours. When, therefore, the eastern wave arrives between Pictou and the Wood Islands, the western part of the preceding tide-wave arrives between Cape Tormentine and Cape Traverse. They then meet, and combine to make high water at the same hour, namely, 10 hours, or a little later in the harbours, all over the central portion of the Strait from Pictou to Cape Tormentine; causing also an amount of rise of the tides everywhere more than double, and in some of the harbours nearly three times as great as that which occurs at either entrance of the Strait.

The eastern flood stream enters the Strait from the N.E., running at the rate of 2½ knots round the East Point of Prince Edward Island, but is much weaker in the offing and over towards the southern shore. It runs round Cape Bear, and with an

increasing rate along the land to the westward; is strongest in the deep water near the land, and runs at its extreme rate of 3 knots close past the Indian Rocks and Rifleman Reef. Losing strength as it proceeds farther to the N.W., it is quite a weak stream when it meets the other flood stream off the Tryon Shoals. This eastern flood stream is not so strong along the southern or Nova Scotia shore, unless it be in Caribou Channel for a short space near Caribou Reef; and it is weak, not generally exceeding half a knot, in the middle of the strait.

The other or western flood stream comes from the northward, along the west coast of Prince Edward Island, sweeping round the West Point, and running strongest in the deep water near the West Reef, where its rate is 2½ knots. Over towards the New Brunswick shore its rate seldom exceeds 1½ knot, and this is its average rate as it pursues its course to the S.E., until we arrive near Cape Tormentine, where the strongest part of the stream runs near the Jourimain Shoals, and thence to the southward round and over the dangerous Tormentine Reefs with a great ripple, and at the rate of 3 knots.

From this account of the tidal-streams it appears that a fast-sailing vessel, under favourable circumstances, might enter the strait with the flood, and, arriving at Cape Tormentine soon after high water, might there take the ebb, and thus have the stream with her, with but slight interruption, from one end of the Strait to the other. Or, a vessel beating with the flood, might so time her arrival at the same point, as to be able to continue her voyage in the same direction with the ebb.

The following directions for navigating the Northumberland Strait are also by Admiral Bayfield:—

"Vessels bound to Miramichi, and the ports in the Strait to the westward of Cape Tormentine, after entering the Gulf on either side of the Island of St. Paul, usually pass to the southward of the Magdalens, and round the North Point of Prince Edward Island. The reef of this last-named point is exceedingly dangerous, and the lead should be kept constantly going when approaching it at night or in foggy weather; bearing in mind the probability of having been previously set to the southward in crossing from the Magdalens, especially if the wind has been from the northward.

Under the same circumstances, after rounding the North Point, the course should be shaped well to the westward, so as to ensure clearing the West Reef, which should be passed by the lead, running along the edge of the bank off the New Brunswick shore. Proceeding south-eastward, after having passed the West Reef, the lead will afford sufficient guidance along either shore, reference being had to the soundings, until we arrive near the narrow part of the Strait at Cape Tormentine.

There, if the vessel be bound farther to the eastward, the shore of Prince Edward Island should be preferred, the soundings on that side being quite sufficient to guide the vessel past Carleton Head, Cape Traverse, and more particularly the Tryon Shoals, if the irregular tides off the latter, and the frequent set of the ebb stream towards them, be remembered. The tides, however, in this narrow part of the Strait, are not very strong along the Prince Edward Island shore, off which the anchorage is good in the event of the wind failing; whilst on the opposite shore there is deep water, and very strong tides close to the Jourimain and Tormentine Reefs.

If the wind be adverse, or scant from the southward, with the ebb tide running, a stranger had better not attempt this narrow passage at night, or when the land cannot be seen. Under such circumstances, it is recommended to anchor to the westward of Cape Tormentine, till daylight or a change of tide renders it less hazardous to proceed. Vessels bound to ports in the eastern division of the Strait, enter the Gulf either through the Gut of Canso or by the Island of St. Paul. In the first case, the bearing of the light at the northern entrance of the Gut will guide them up to Cape George, from which, if bound to Pictou, there will be no difficulty in running along the land to the westward, if due attention be paid to the soundings, and afterwards to the bearing of Pictou Light. If the weather be thick, or the light not seen, beware of the reef off the east end of Pictou Island, which should not then be approached nearer than the depth of 10 fathoms, especially if the flood-tide be running.

Vessels approaching from St. Paul's, and entering the Strait at the East Point of Prince Edward Island, should not approach the latter nearer than 20 fathoms in dark nights or thick weather.

Cape Bear and its reef should not be rounded in less than 15 fathoms, under the

same circumstances; and then, if bound anywhere to the westward of Pictou, the vessel should be kept more over towards Pictou Island and the southern shore, where the soundings will guide her, till the Indian Rocks and Rifleman Reef are passed. The Light on Point Prim will greatly assist in passing the last-named danger, after which the lead will again afford sufficient guidance along the Prince Edward Island shore, past the Tryon Shoals, and through the Strait to the north-westward.

On the opposite, or Nova Scotian shore westward of Pictou, the principal dangers to be avoided are the Middle Shoals, between Pictou Island and Caribou, Amet Island and Shoals, and Waugh Shoal. The approach to all these is sufficiently indicated by the soundings, and therefore a constant use of the lead, and a careful reference to the chart, will enable the intelligent seaman to pass them at all times in safety; and also to conduct his vessel to any of the harbours of this coast, where pilots will readily be obtained."

PART II.

RIVER ST. LAWRENCE.*

NORTHERN SHORE, FROM THE RIVER ST. JOHN TO THE SAGUENAY.

From the River St. John the coast runs W.N.W. 69 miles to the River Moisic, and, although appearing bold from a distance, it should not be closely approached, on account of the many dangerous rocks lying nearly a mile from the shore. Between Magpie and Bason Rivers 20 fathoms are considered to be a sufficiently near approach to the shore, and from thence to Point St. Charles 40 fathoms, as the rocks are steep-to, and have this depth within a mile of them.

RIVER ST. JOHN.—The entrance of this river lies in lat. 50° 17′ N., and long. 64° 23′ 30″ W., and is 130 fathoms wide; but immediately within it increases to half a mile, and then narrows again, running several leagues up the country between high cliffs of sand and gravel, over clay, with small sandy islands occasionally. A bar, shifting with every gale of wind, lies at the distance of half a mile from the entrance, having 7 or 10 feet on it at high water, according as it may be neap or spring-tide; it is rendered quite impassable during southerly and westerly winds, which cause a very heavy surf. Good anchorage may be procured outside the bar, to which you may safely approach by the lead. At 11 miles to the north-eastward of the entrance is Mount St. John, an isolated saddle-backed hill, 1416 feet above the sea at high water, which forms an excellent mark for the river.

At the distance of 8 miles, W.N.W., from the River St. John is Magpie Point, between which lies Magpie Bay, where good anchorage may be obtained with off-shore winds, in a moderate depth of water. Magpie River disembogues in the northern part of Magpie Bay, and is a rapid stream, with a very narrow entrance. Nearly a mile west of the river is a rocky shoal at a quarter of a mile from the shore, on which the sea breaks.

At 3½ miles, W.N.W. ½ W., from Magpie Point is Ridge Point, off which a long narrow ledge, of 4 to 6 fathoms, extends 4½ miles to the westward, having within it one large and several small islands. This ledge is rocky and steep-to, and at times the sea breaks very heavily on it, occasioning great risk to large vessels.

About 11 miles farther to the westward is Sawbill River, easily recognised by the remarkable barren hills on either side of it, and also by the clay cliffs just within the entrance. It affords shelter to boats and small coasters, and can only be entered in very fine weather. About 9 miles to the southward of this river there is a bank of sand, gravel, and broken shells, of 35 to 50 fathoms water, on which cod-fish abound: between it and the shore are upwards of 60 fathoms.

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* See note at foot of page 26.

About 7½ miles to the westward of Sawbill River is the Shallop River, affording shelter for boats, which can only enter when there is no surf. Off this, as well as off Sandy River, 2½ miles farther westward, there are several rocks, both above and under water, some of which lie fully half a mile from the shore.

Manitou River.—This river lies 4½ miles, N.W. by W., from Shallop River, and 35 miles westward of St. John's River, and is the largest on this part of the coast. It may be readily known, even at a distance, by two remarkable patches of clay cliffs, one of which is close to the eastward and the other about a mile to the north-westward of the entrance. At a short distance within the entrance of the river is one of the most magnificent waterfalls in Lower Canada, which falls 113 feet perpendicularly in one unbroken sheet of water. In fine weather, and with off-shore winds, good anchorage may be procured off the river in 15 fathoms, with the entrance bearing N.E. ½ E.; but small vessels may anchor farther in-shore. A small rocky shoal lies W. by N., 2¼ miles, from the entrance of the river, about three-quarters of a mile from the land.

About 10¾ miles from Manitou River is Bason River, having a spit of large stones running out about 150 fathoms from its east point of entrance. It is only fit for boats, and there are rapids within a short distance of the entrance. At 1¼ mile from this river is Cape Cormorant, 5¾ miles from which is Blaskowitz Point, having between some islets joined to the shore at low water, off which at about a mile from the shore is the Cormorant Reef, having 12 feet on it: this reef bears W. ½ N., 2½ miles, from Cape Cormorant, and lies with Points Blaskowitz and St. Charles in one, W.N.W. nearly, so that vessels on approaching should keep the latter point open. The coast to Cape St. Charles is lined with rocks, and must have a good berth given to it.

Point St. Charles forms the eastern point of Moisic Bay, and has a dangerous reef running off it, some of the rocks of which are above water, but the outermost patches are always covered; these latter lie S.S.W., three-quarters of a mile, from the point. This reef is so steep that there is no warning by the hand lead and very little by the deep-sea lead. Vessels beating here should guard against getting becalmed to the westward of this reef, lest the heavy S.W. swell should carry them towards the reef, for the water is too deep to anchor until close to the breakers.

Moisic Bay is about 11 miles in extent, with a depth of 50 or 60 fathoms between Point St. Charles, the eastern point, and Point Moisic, the western point. Trout River is nearly in the centre of the bay. The eastern shores of this bay are rocky; but the western shore, from Trout River to Moisic River, is a bold sandy beach. Shelter for small boats is afforded in Seal House Cove on the eastern side of the bay.

At Point Moisic is the Moisic River, which, although larger than the river St. John, is so much obstructed by sand-bars that boats cannot ascend at low water. From the eastern point of entrance a bar runs half a mile and dries at half-tide, close to which are 40 fathoms of water. A bank runs off, in a westerly direction, 3½ miles from Moisic Point, and forms a large triangular shoal, of from 1 to 2 fathoms, having near its S.W. extremity the Moisic Rock, of only 9 feet, which lies 1¾ mile from the shore, and is very dangerous, being as bold as a wall on the south and S.W. sides, and can generally be seen in fine weather, from the change in the colour of the water. When a vessel is standing towards this rock, she should tack when the north side of Manowin Island comes on with the south side of Great Boule Island, bearing W.N.W. ¾ W., as then she will be a mile from the edge of the shoal.

At 9 miles N.W. by W. from the Moisic Rock is Sandy Point, having Boule Bay between, into which vessels should not venture, on account of its exposure to the southerly swell. Near the centre of the bay are the East Rocks, always above water, low, and bare of trees.

SEVEN ISLANDS BAY.—Off the entrance of the bay are the islands giving the name to the bay, which are high, steep, and thinly wooded, and may be seen 7 or 8 leagues off. The two easternmost islands are named the Great and Little Boule, and are separated by a narrow channel, which is considered to be unsafe, on account of the baffling winds and strong tides. Westward of these and parallel to them are the Basque Islands, and to the south-westward of these are Monowin and Carousel Islands. Thus there are altogether six islands, and they are all of considerable height; the seventh island, so called, is the peninsula forming the western part of the bay, which, at some distance, appears like an island, and is estimated to be about 730 feet high. Between Monowin and the peninsula are the West Rocks, which are small and low.

Seven Islands Bay is 2¾ miles wide. A fine broad, bold, sandy beach extends for three miles northward from the east point of the bay to the entrance of the principal river, near which stands the Hudson Bay Company's trading post. You cannot see these houses from the outer parts of the bay; but there is a wooden store on the beach, off which vessels usually anchor. This fine bay is sufficiently extensive for the largest fleets to lie in perfect safety, and so nearly land-locked as to resemble a lake.

There are three channels leading into this bay, the eastern, middle, and western channels. The eastern channel, between Sandy Point and Basque Island, is seldom used, on account of a rock in its centre, which is only covered at high tides; a reef also runs off to the eastward of the rock, one-quarter of a mile, with 6 to 9 feet on it. The principal and best channel is the middle one, between Carousel and Monowin on the west, and the Basque Islands on the east; you leave the West Rocks and Point Chassé on the peninsula, on your port hand, giving the latter a good berth, to avoid a reef that runs off 120 fathoms. The course through the middle channel into the bay is North, by compass.

The west channel, though much narrower than the middle one, is also free from danger, being three-quarters of a mile wide, between Point Croix and the West Rocks, off which there are two or three rocks at the distance of a cable's length to the northward: therefore give the West Rocks a berth of 2 cables' lengths in passing. The ebb tide is turned off towards these rocks by Point Croix, which must be attended to. No leading-marks are necessary; for simply by giving the shores a berth of 2 cables' lengths in every part, you may enter the bay with safety, even with the largest of ships. With a scant wind from the north-westward, this channel is preferable to the Middle Channel, as it will save a good deal of beating into the bay. The ground is not fit for anchorage until you are well within the bay.

Admiral Bayfield says:—"The best berth for a large ship to lie at anchor in Seven Islands Bay is with Sandy Point and the north side of Little Boule Island in one, and with Point Chassé on with the west side of the West Rocks. The N.W. extremity of the sandy beach near the entrance of the river will then bear N. by E. ½ E.: the vessel will be in 9 fathoms at low water, over clay bottom, nearly 1 mile from the sandy beach to the eastward, and nearly three-quarters of a mile from the 3-fathom edge of the shoals, which occupy the northern part of the bay. Smaller vessels may lie closer to the shore, in 6 fathoms at low water, which is as near as a vessel ought to anchor. In this anchorage there is a considerable swell with a strong southerly wind, but never enough to endanger a vessel, although sufficient to prevent boats from landing. Those that may wish to lie perfectly smooth, may anchor in the S.W. part of the bay, in 13 fathoms, soft clay bottom, where they will be perfectly land-locked."

Outside the islands the water is very deep, and a vessel is enabled to stand in almost close to their rocky shores.

From Seven Islands Bay the coast runs to the S.W. by W., 60 miles to Point de Monts, and is in general of moderate height, with a few hills back in the country. The shore, generally, is clear of danger, and may be approached by the deep-sea lead.

The first river met with after leaving Seven Islands Bay is St. Margaret's River, which is about 8 miles from Carousel Island. On either side of the river's mouth is a sandy beach, and a bar extends three-quarters of a mile off the entrance.

St. Margaret's Point, on the west side of the bay into which the river falls, is of moderate height, and has a reef extending one-third of a mile off, which is bold-to, having 70 fathoms within a short distance of it, so that little or no warning is given by the lead.

About S.W. by W. ½ W., 16 miles, from St. Margaret's Point is Great Cawee Island, having a low coast between, bordered with small islets and rocks close in-shore; but this part may be approached by the lead to 20 fathoms: the deep-sea soundings off this part of the coast are very irregular. Great and Little Cawee Islands are high, and bare of trees. On the N.W. side of Great Cawee Island there is a bay, in the mouth of which anchorage may be found at a cable's length from the island, with shelter from W. by S. round to N.E. and easterly; but S.W. winds blow right in, and send in a heavy sea. The entrance to this place is dangerous and intricate, and too small for large ships, yet it might be of use to a vessel in distress.

To enter this anchorage from the eastward, steer N.W., past the N.E. side of Great Cawee Island, going not nearer than half a mile, to avoid the shoal off the mouth of the cove, until the point of the mainland to the westward opens clear of the north side of the island. Then steer for the point of the mainland, keeping it midway between the north side of the island and the large rocks to the northward of it. When you arrive between the rocks and the island, haul into the mouth of the small bay, which you will see on the N.W. side of the latter, and anchor in 7 fathoms at low water. There are 12 or 13 fathoms in the middle of the channel, and upwards of 9 fathoms can be carried through.

In running for this anchorage from the westward, a vessel may pass between Little Cawee and the main, keeping in mid-channel; but the better and safer way is to pass between Little and Great Cawee Islands, hauling close round the west point of the latter into the anchorage. In this route there is nothing in the way, excepting the round rock to the south-westward of the south point of the Great Cawee Island, which can always be seen.

The tides run fairly through between the islands and the mainland, at a rate seldom exceeding $1\frac{1}{2}$ knot, and generally of much less.

At 11 miles S.W. by W. from Great Cawee Island is English Point, between which there is a good open roadstead named *Lobster Bay,* affording plenty of accommodation for the largest vessels. On the west side of the bay are the Crooked Islands, between which and the reef extending off the eastern point of the bay, named Point Sproule, there is good anchorage in 5 to 12 fathoms, on fine clayey sand, well sheltered from S.W., round by west and north, to East; but all winds from East, round by south, to S.W. go right in with a heavy sea and thick weather.

About $1\frac{1}{2}$ mile to the westward of the Crooked Islands is Pentecost River, having an entrance only 90 feet wide, with 7 feet in it at low water. It is navigable for boats a distance of $2\frac{1}{2}$ miles, and at high water, and when the depth increases to 12 or 16 feet, small coasting vessels may run in and obtain shelter. Hence to English Point the shore consists of a fine bold sandy beach.

English Point has a shoal of large stones extending off it to the distance of about one-third of a mile, which is bold-to on the east and south-east sides. About 2 miles, S.S.W., from the point is Egg Island, having between them the N.E. Reef and North Rocks. Egg Island is low, narrow, without trees, and about three-quarters of a mile long, in a N.N.E. $\frac{1}{2}$ E. direction. The North Rocks, always above water, lie 4 cables' lengths N.N.E. from the island, and form a black, low, narrow reef, 3 cables' lengths in the same direction, bold towards the main and likewise towards English Point. A reef under water runs out from these rocks in a S.S.W. direction, $2\frac{1}{2}$ cables' lengths, leaving a very narrow channel between them and the island, with only 3 fathoms in it. The N.E. Reef runs off 6 cables' lengths from the N.E. part of Egg Island, and is the greatest danger on the coast between Point de Monts and the Seven Islands; some of the rocks are awash at low tides.

The island and the reefs form a natural breakwater, $1\frac{3}{4}$ mile long, in a N.N.E. direction; the northern end is three-quarters of a mile from the mainland, and the southern nearly a mile. Within, and westward of this breakwater, is good anchorage; but it is very much narrowed by flats running off from the main, which, opposite to the north end of Egg Island, diminish the width of the channel to 370 fathoms. The best anchorage is to the S.W. of this narrow part, in 9 fathoms, sand. As the water is deep towards the island and reefs, a ship should have a good scope of cable with a westerly wind, lest the anchor should start, and you drive on the rocks before a second anchor can be let go; with easterly winds you drag up hill, and there is not much danger of the anchor starting. The best anchorage is with the S.W. end of Egg Island bearing S.E. by S., and the inner side of the North Rocks N.E., in which position you will lie sheltered from all winds except those between S.E., round by south, to S.W., and even with them a vessel may find shelter by changing her berth more to the eastward, in 7 fathoms, sandy bottom.

There is nothing in the way when entering this anchorage from the southward and westward, the S.W. end of Egg Island being bold. If you intend running through between the island and the main, stand to the northward to 8 or 9 fathoms, or until English Point is open half a point to the northward of the North Rocks; then steer for English Point, giving the inner side of the North Rocks a berth of a cable's length, until you have passed them one-third of a mile; you will then be in 7 fathoms,

and may haul out to sea, not going to the southward of S.E. by E. till clear of the N.E. reef. You may run through this channel from the eastward, by reversing the directions.

About 2½ miles W. by S. from Egg Island is a small stream named Calumet River. Hence to the southward, for the distance of about a mile, the shore is bordered by reefs of large stones having 15 fathoms off them at the distance of half a mile to seaward. To the S.W. of these reefs, as far as Trinity Bay, the coast is free from danger, and may be approached with safety if due caution be used. There are 20 fathoms at the distance of half a mile to 1 mile, and 40 fathoms from 2 to 3 miles from the shore. S.W. by S. from Egg Island, distant 8½ miles, is Caribou Point, a small rocky peninsula, having sandy coves on either side of its isthmus, in which pilot boats find shelter, and often remain on the look-out for vessels.

Trinity Bay.—This bay is 5 miles to the southward of Caribou Point, and affords safe and convenient anchorage for vessels unable to beat round Point de Monts. Pilots are generally found waiting in the bay for vessels when the wind is from the westward, but in easterly winds they take shelter in St. Augustine Cove 1½ mile to the westward of Cape de Monts.

In the N.E. part of the bay are two rocks, the northern one of which dries to the main with spring ebbs, but the southern one dries nearly a quarter of a mile to the southward of the point. This bay is 3 miles round, and a river of excellent water falls into it; another stream may also be found about half a mile to the westward of the west point of the bay. Wood is abundant.

To sail into Trinity Bay, either from the S.W. or N.E., come not nearer either shore than 15 fathoms until the bay opens; then haul in, and anchor in 7 fathoms, with the lighthouse on Point de Monts bearing S.W. by W. Small vessels may anchor in 3 fathoms, just within the reef, the western point bearing S.W.; and large vessels may take a berth a little farther out.

POINT DE MONTS.—This point is of moderate height, and has a lighthouse upon it, showing a bright fixed light, 100 feet above the sea, visible about 15 miles. A ledge of rocks, having 9 or 10 feet water on it, lies S.W. from the lighthouse and S.E. from the extremity of the point, extending half a mile from the shore, and there is another rock with two fathoms on it at half a mile S.S.W. from the lighthouse. A third rock, with a little more water over it, is said to lie E.S.E. from the lighthouse at nearly the same distance. In approaching these shoals great caution is necessary; 15 fathoms being considered to be as near as safety will permit.

Vessels being to the eastward, in a dark night, when the land cannot be seen, should tack when the light bears W.S.W., or even W. by S., if they are as near as Trinity Bay. Vessels to the westward of the light should tack as soon as it bears E. ½ N.; when it bears East, it will be shut in by the land.

At 1½ mile to the westward of Point de Monts is St. Augustine Cove, which is a place of shelter for boats, and where pilots may occasionally be found.

CAPE ST. NICHOLAS lies 17 miles W. by N. from Point de Monts. About half way between is Goodbout River, which is available only for boats. At 3 miles before reaching the cape is *St. Nicholas Harbour*, affording excellent shelter. The entrance is 75 fathoms wide and has 14 to 17 feet at high water, but at low water spring-tides there are only 5 feet. The shoals on the east side dry out so far as to leave a channel only 30 fathoms wide, in which are a few large stones which can be seen and avoided if the tide be not high enough to pass over them. In the deepest part of the harbour are 9½ fathoms. From Cross Point, the western point of the entrance, which is bold, the shoal water extends across a small bay to the westward of the point, 4 cables, and off shore 1 cable. The anchorage between the shoals off the harbour's mouth is too much confined for large ships, being only about 3 cables' lengths in width, but the ground is good and depth moderate; here you may anchor, and prepare for warping in.

To enter the harbour, bring the end of Cross Point to bear N.N.E., then steer so nearly for it as to leave it not more than 50 nor less than 30 yards distant on the port hand. If the wind will allow, continue to run in, at the same distance from the shore on the west side, until you deepen your water; but if you lose the wind, or be met with light baffling flaws out of the harbour, as often happens in westerly winds, send a line on shore on the west side, or drop your anchor underfoot as soon as your vessel loses her way, and warp into deep water. The shoal water, which may be called the bar,

and commences at Cross Point, continues for 2 cables' lengths within it, and the channel is rendered narrow by shoals off the eastern side, for an equal distance farther up the harbour. In order to have as much room as possible, a vessel should anchor farther in than the three large rocks, which will be seen on the eastern side of the harbour. To run out again, a vessel must wait for a N.W. wind or take advantage of the land-wind in the early part of the morning, which often occurs in fine weather when westerly winds prevail; or, lastly, she must warp out in a light breeze or calm, to the entrance of the bay outside, and to a position from which she can make sail.

South-east winds blow right into the harbour, and are consequently most favourable for running in, but with a strong wind in that direction, and at high water, when the shoals are covered, there is generally some sea outside the narrow entrance; an accident at such a time might be attended with serious consequences, and therefore it is only in very fine weather that the entrance should be attempted with a S.E. wind.

North-west winds blow right out of the harbour, and often with great violence. A W.S.W. wind is the safest for running in, for the entrance and bay outside are then quite smooth, the sea being turned off by Cape St. Nicholas; but this wind will seldom take a vessel completely in; it will usually only enable her to shoot so far within Cross Point that a line may be sent ashore, or a kedge ahead, for the purpose of warping in the remainder of the way, which may be quickly done if due preparation has been made beforehand. The entrance should be attempted in the last quarter flood, then if the vessel touches the ground she will receive no damage, and there will be time for her to warp in before the tide begins to fall.

It is high water, F. and C., at 1h. 55m.; spring-tides rise 12 feet, neap-tides 7 feet. Water can be easily obtained on the eastern side of the harbour, or at the head of the harbour at high water.

At the distance of 13½ miles, W. ½ N., from Cape St. Nicholas is Point St. Giles, which is high and rocky. Between these two points are St. Pancras Cove and English Bay, of no use to shipping. About 5 miles to the south-westward of Point St. Giles is Manicouagon Point, which is low and thickly wooded, with a broad sandy beach like the rest of the coast westward to Outard Bay.

Between Points St. Giles and Manicouagon is Manicouagon Bay, which is dry at low water, with the exception of the narrow channels leading to the river. The bay is too dangerous a place to be of much use to shipping.

Off *Manicouagon Point* a sandy shoal extends, having many boulders on its eastern and southern parts; the easternmost point of this extensive and dangerous shoal lies E.S.E., 2½ miles, from St. Giles Point, and E. by N., 5¼ miles, from the N.E. part of Manicouagon Point. From the south point of the shoal it continues to the westward, curving with the land past Outard Point fully 16 miles, and extending from the shore from 2 to 2½ miles. Near to Outard Point are all sand and clay cliffs. The tide of flood and ebb sets all along the edges of this shoal, but it is not perceptible more than 5 or 6 miles off shore. Great ripplings are frequently met with without the edges of this shoal, particularly off its south point.

From Manicouagon Point the coast runs 11 miles to Outard Point, on the north side of which is the river, which is useless for vessels. From Outard Point to Bersimis Point the distance is 9 miles; between them the coast forms a bay, having three rocky islands in it which appear as two from seaward. In the western side of this bay there is anchorage in 14 fathoms, mud, with Bersimis Point bearing S.W. by S., 3¾ miles; but in running for it caution is required to avoid the bar of Bersimis River. Here you will be exposed to easterly winds.

Bersimis River, in the western part of Outard Bay, has sands and shoals extending 1½ mile outside the entrance, which dry at low water and render the place useless to shipping. Immediately outside these shoals the water suddenly deepens to 60 fathoms within a mile or two. Bersimis Point is low and covered with spruce-trees, and as the lead affords no warning, it is very dangerous to approach it either at night or in foggy weather.

From Bersimis Point the coast runs 5½ miles W. ¾ N. to Jeremy Island, which is small and lies close to the shore. From thence it runs 5 miles S.W. by W. ½ W., to Cape Colombier, which is rocky, with a small islet close to its western shore. About 1¾ mile from off this cape lies the *Gulnare Shoal*, a narrow ridge of granite rock, nearly 2 miles long, running parallel to the shore, with 2 to 3 fathoms over it at low water;

it is very dangerous, as there are 23 fathoms close to its S.W. end, and also along its southern shore. Between it and the shore are 4 to 5 fathoms. *Wildfowl Reef* lies 4 miles S.W. by W. ½ W. from Cape Colombier; it consists of a large bed of rocks, extending three-quarters of a mile from the shore. Vessels therefore should be careful when standing in towards this part of the coast, 30 fathoms being quite near enough.

Between Cape Colombier and the Wildfowl Reef the coast bends inwards and forms a shallow bay full of rocks, named Plongeur Bay, and 4 miles hence to the westward is the Baie de Laval, having a rocky island at its entrance, within which it dries at low water. Vessels may safely stand in towards it, as the soundings decrease gradually from 10 fathoms at the distance of 2½ miles from the shore. Off the clay cliffs to the S.W. of the bay there is good anchorage in 6 or 7 fathoms, clay bottom.

At *Port Neuf*, 8 miles farther to the south-westward, is a station of the Hudson Bay Company, which with the church can be distinctly seen from the offing. About three-quarters of a mile E.S.E. from the church, upon a low narrow peninsula, there is a clump of pine-trees; this peninsula runs N.N.E. for about 2 miles, and joins the clay cliffs before mentioned. There are 7 to 12 feet water between the main and the peninsula at high water. Here small vessels may find good shelter, by lying aground on the sand at low water.

A small patch of sand, having 3¾ fathoms on it, lies with the church at Port Neuf bearing S.W. by W. ½ W., from 1¾ to 3 miles, which would be dangerous to a vessel in a heavy sea. From hence the Port Neuf Sands extend round the peninsula to Point Mille Vaches, and run out from the shore about 1¾ mile; they are very dangerous, as there are 20 to 30 fathoms close to them.

POINT MILLE VACHES is low and sandy and covered with spruce-trees. The shoals off this point narrow the navigable channel between them and Biquette, on the opposite side, to 11½ miles; both sides are bold-to, and as the set of the tides and currents is very strong, the greatest attention to the soundings and a good look-out are absolutely necessary to a vessel running up in dark nights or foggy weather.

Into the Bay of Mille Vaches several small rivers fall, the principal of which is the Sault de Mouton, which has a fall of 80 feet just within the entrance. In the bay are a number of shoals and rocks which dry at low water. Good anchorage may be obtained in this bay, sand and mud bottom, with shelter from S.W. by W., round by north, to N.E. by E., with the south extremity of Point Mille Vaches on with the inner or north side of the pine-trees on the peninsula of Port Neuf, bearing N.E. ½ E., at the distance of 2 or 3 miles from the point, and three-quarters of a mile from the shoals. There is not much tide, and the ground is good.

The course and distance across the Bay of Mille Vaches to two large rocks, which have three small ones nearly a mile to the S.W. of them, and are named the Esquamine Islets, is S.W. ¾ W., nearly 12 miles. The coast to the south-westward, from the Esquamine Islets to Little Bergeron, a distance of 16 miles, consists of granite rock, steep and bold, and free from all danger, excepting a flat which occupies a bay on the west side of Cape Bondesir, but which does not extend above a quarter of a mile outside of a line joining the points of the bay, and is consequently very little in the way of vessels. There are upwards of 50 fathoms water close to the rocks along this part of the coast.

TIDES.—The tides are regular, increasing in strength as you approach the comparatively narrow pass on either side of Red Islet. The flood is the stronger tide of the two, the ebb being deflected over towards the southern shore by the stream out of the great River Saguenay. The flood does not extend above 5 or 6 miles off the north shore below Bergeron, and the closer to that shore the stronger is the stream. Its rate at Point Mille Vaches, where it does not extend far off shore, is from 1½ to 2 knots; and off Bergeron from 2 to 3 knots, in spring-tides.

Great and Little Bergeron are two coves separated by a point. They are both full of large boulders, which dry at low water, and have small streams at their heads. Little Bergeron is of the two the most to the S.W. From it Green Island Light bears S. by E. ½ E., 11½ miles, and the Saguenay Cliffs, at the east point of entrance of the River, S.W. by W., 5½ miles.

You may anchor, with the Saguenay Cliffs bearing W. by S., distant 3 miles, in 7 fathoms, with the S.W. end of Green Island and Red Islet in one, nearly a mile off shore; but immediately without this you fall into deep water.

THE RIVER SAGUENAY has its entrance between Vaches Point on the

eastern, and Lark Point, composed of low clay cliffs, on the western side, from each of which dangerous reefs project into the River St. Lawrence; that from Vaches Point extending S.E. by E., nearly 2 miles, and terminating in a rocky spot of 14 feet, named *Vaches Patch*, which is marked on its south-west side by a black buoy, to be left on the starboard hand when entering the Saguenay; and that from Lark Point, named *Lark Reef*, projects to the southward 3¼ miles to a small patch, always uncovered, and marked by a red buoy, and also to the eastward a similar distance, where its outer parts bear the names of Lark Islet Spit and Bar Reef, the eastern extremity (4 fathoms) of the latter having a chequered buoy upon it, to be left on the port hand. A small rocky patch of 18 feet water lies ½ a mile S.S.E. from this chequered buoy, with Lark Point bearing W. ¾ N., distant 3⅘ miles, and Vaches Patch black buoy N. by W. 1⅘ mile; this shoal is named *Prince Shoal*, and if the western side of the Brandy Pots is brought in a line with the western side of White Islet you will clear the south and south-east edges of Lark Reef, but pass right over this danger. These reefs leave an entrance into the Saguenay only ¾ of a mile wide, though nowhere less than 11 or 12 fathoms deep.

This extraordinary river, which was imperfectly known till the late surveys, is as remarkable for the great volume of water which it brings down to the St. Lawrence, as for the enormous depth of its bed, which is fully 100 fathoms lower than that of the St. Lawrence. It comes from the Lake St. John, and at Chicoutimi, a trading post of the Hudson Bay Company, which is 65 miles above its mouth, it becomes navigable, and 6 miles above which, to the rapids, the tide ascends. To Point Roches, 57 miles from the St. Lawrence, and 8 miles below Chicoutimi, it is navigable for the largest ships; and up to this part there is no danger in the river, the shores consisting of steep precipices, some of the headlands rising more than 1000 feet in height.

The current runs down with great force, the ebb-tide varying from 3 to 5 knots, according to the breadth of the river, which is from two-thirds of a mile to 2 miles. At the mouth of the river this ebb-tide runs at the rate of 7 knots over Lark Islet Spit, and off the S.W. extreme of Point Vaches.

Tadousac, which is on the eastern shore, about 1⅓ mile within the entrance of the river, was formerly the principal post of the French for trading with the Indians. It has declined, and now belongs to the Hudson Bay Company.

The harbour is abreast the settlement, and is well sheltered; but a heavy anchor should be cast close in-shore, on account of the eddies which sometimes set into it from the river.

Fronting the mouth of the river there is a kind of bar, upon which are 12, 20, and 28 fathoms, but immediately within, the depth increases to above 100, and a little farther up to 150 fathoms. The current setting strongly over the bar, meeting with the spring ebbs of the St. Lawrence, cause breaking and whirling eddies and ripplings; and these streams opposed to a heavy easterly gale, cause an exceedingly high, cross, and breaking sea, in which no boat could live. On the flood at such times, there is no more sea than in other parts of the river.

To enter the Saguenay, have the beginning of the flood, and sufficient daylight to reach Tadousac. Winds from the S.W., southward to N.E., will take vessels into the river with the flood, but the N.E. is most to be depended on; but whether you approach from the S.W. or N.E., bring the Brandy Pots open to the southward of, or just touching White Island, bearing S.S.W. ¾ W. Run upon this mark (and it will lead you well clear of Point Mille Vaches Patches, Prince Shoal, and Lark Reefs, off the mouth of the river,) until La Boule Point comes in one with Point Ilot, bearing N.W. by W. ¼ W., which will clear the S.W. side of Point Vaches Reef; Point Ilot being the rather low N.W. point of the Harbour of Tedousac, and La Boule a high and round-backed hill, forming a steep headland, 4 miles above Tadousac, and the extreme point seen on the same side of the river.

Haul in upon the last-named leading mark, keeping the S.W. extreme of La Boule just open, which will clear all dangers; and when as far in as Point Rouge, bear towards the trading post, into the harbour, dropping your outer anchor in 16 fathoms, and the inner one close to, or within, low-water mark.

SOUTHERN SHORE FROM CAPE GASPÉ TO BIC ISLAND.

THE coast between Cape Gaspé and Cape Chatte is high and bold, free from danger, and destitute of harbours; but although free from danger, it must, nevertheless, be guarded against in dark foggy nights, since the water is everywhere too deep to afford sufficient warning by the lead for the safety of vessels. The shore along its whole extent, excepting in some of the bays, is of highly inclined slate and greywacke rocks, which would cut through a vessel's bottom in a very short time; and such is the impracticable nature of the country, that those who might escape to shore would run great risk of perishing from want before they could reach a settlement.

Cape Rosier.—At 7 miles from Cape Gaspé is Cape Rosier, which is low and has shoal water extending from it about one-third of a mile: in the bay to the southward of it there is also a reef extending half a mile from the shore. Under Cape Rosier there is shelter from N.W. winds, but it is not considered desirable anchorage. Upon the extremity of the cape stands a circular stone tower 112 feet high, and faced externally with fire-bricks of a light colour, from which a fixed light is exhibited at the height of 136 feet above high water, visible in clear weather 16 or 17 miles. It is lighted on the 20th March and continued every night till the 31st December. Lat. 48° 51′ 37″ N., long 64° 12′ W. Signals are given by means of an air or fog whistle, sounded at short intervals during foggy weather and snow-storms, or by a nine-pounder gun every hour whenever the whistle is out of order.

About 7 miles to the north-westward of Cape Rosier are Griffin River and Cove, affording shelter for boats, and 5 miles farther is the Great Fox River, off each point of the entrance to which are reefs sheltering the anchorage. Here vessels may anchor for a short time in summer, and obtain supplies of wood, water, and fresh provisions. At 16 miles from Great Fox River is Great Pond, a small creek affording shelter to boats.

The *Magdalen River* is 24 miles N.W. ½ W. from Great Pond. It is sheltered from the northerly winds by a reef which extends out from the north-west point (Cape Magdalen) of the entrance about 200 fathoms, in a direction parallel to the coast. The river has 13 feet water at spring-tides, so that small vessels are enabled to run in when the sea is smooth and the weather fine. In the bay vessels may anchor in fine weather in 7 fathoms, sand, gravel, and broken shells, at the distance of three-quarters of a mile from the sandy beach, with the N.W. point bearing W.N.W.; here they will be well sheltered from W.N.W., round by south, to E.S.E.

About 16 miles from the Magdalen River is the Bay of Mont Louis, in which small vessels may anchor in 8 to 16 fathoms during fine weather, riding nearer the west than the east side; here they will be sheltered from W.N.W., by south, to E.S.E. At the back of the bay is the river, but as it has only 7 feet at the entrance at high water, none but boats can venture in.

CAPE ST. ANN.—From the Bay of Mont Louis to Cape St. Ann the distance is 26 miles, and the coast is of moderate height with cliffs. Inland, and beyond the cape, are the mountains of St. Ann, which commence about 4 leagues south-westward of the cape, and continue in that direction 10 or 12 leagues. They are of great altitude, and may be seen 80 or 90 miles in clear weather: the highest peak lies 14 miles within Cape Chatte, and is estimated to be 3970 feet above the sea; these hills are therefore the highest in British America.

There is a settlement at St. Ann's River, about 3½ leagues E.N.E. from Cape Chatte, where a few families reside, who are always ready to afford assistance if necessity should require it; but this as well as the little river near Cape Chatte are both barred at the entrance, and afford very little accommodation to shipping, although the former river, St. Ann's, may be entered by small schooners at high water. Cape Chatte River becomes almost dry at low water, except one spot, where 10 feet may occasionally be found. These rivers are therefore but little frequented.

CAPE CHATTE, in long. 66° 49′ W., can easily be distinguished, as it appears like a round hill, separated from, but of less height than, the land behind it. It is the most northerly point of land on the south side of the River St. Lawrence. Hence to the River Matan the distance is nearly 11 leagues on a W. ¼ S. bearing; between there are several coves having the appearance of affording shelter, but none is attainable. The shore is all bold, with high cliffs, and affords nothing but wood and

water. Off this part of the coast the soundings are all of sand beyond the depth of 15 fathoms, but within that depth they are hard and foul. In 15 fathoms water you will not be half a mile from the rocks, and in some places close to them. The water deepens very fast from 15 fathoms; so much so, that 1½ mile from shore you will have 50 and 60 fathoms, with fine, clean sand, and somewhat farther off no ground at 100 fathoms.

The tide flows, by the shore, till 2 o'clock nearly, at Cape Chatte; but the tides in the River St. Lawrence are very much influenced by the winds; so much so, that strong easterly winds make them flow much stronger and rise much higher, while westerly winds have a contrary effect. Common springs rise 12, neap-tides 6 feet.

The *River Matan* is small and with a narrow entrance, and only available for small vessels. When abreast of the river, and not more than 3 or 4 miles from it, you will see several houses, and a bluff cliff standing by itself close to the west side of the entrance. If desirous of entering, you should never attempt it without a pilot, as the bar shifts, and there is seldom more than 4 feet at low water, and 15 at high water, spring-tides. Outside the bar there is anchorage, in 5 fathoms, at half a mile off shore, or a little farther out, in 10 fathoms, bottom sand and clay. A very rapid tide sets out of the river during the ebb.

Pilots and provisions may be procured here if you should be in want or distress. The tide flows at 2h. on the days of full and change.

When a few miles to the eastward of Matan, and 3 miles from shore, you will see the Paps of Matan bearing S.W.; they stand in-land, to the westward of the river, and are with difficulty to be distinguished, although this is the best bearing upon which to see them; Mount Camille will then bear S.W. by W. ½ W., distant 14 or 15 leagues: this mountain appears to the northward of all the land then in sight, in the form of a circular island.

From Matan to Little Metis Bay the distance is 22 miles along a low, rocky, wooded shore. The bay is small and divided into two rocky coves, dry at low water, into the southern of which a stream falls. Metis Point, the outer point of the bay, has several buildings on it, and a reef runs from it to the eastward, which affords shelter to small vessels from the N.W. winds. This reef partly dries at low water, and may be passed by the lead in a depth of 4 fathoms.

Grand Metis is separated from Little Metis by Metis Point. In the western part of the bay is the river, which is of but little use to ships, as the bay nearly dries at low water; however, small vessels may anchor there with S.W. winds, in 3 fathoms at low water, but with westerly winds they will have no shelter. Notwithstanding, vessels lie here during the summer months, to load timber; they generally moor with the river bearing S.S.W., distant 1½ mile, in 6 fathoms at low water, bottom mud. A vessel may occasionally anchor anywhere off the bay, in 6 to 12 fathoms, bottom good, and sufficient room to get under weigh. Grand Metis has risen into notice from the saw-mills erected on a fall about 3 miles up, where quantities of fine spruce deals are cut.

Cock Cove, 14 miles to the westward of Metis Point, affords good anchorage in 3 fathoms at low water, with shelter from the winds along the coast; from it Mount Camille bears S.E. by S., distant 8 miles.

Father Point lies 4½ miles westward of Cock Cove, and may be distinguished by its lighthouse, an octagonal white building, in lat. 48° 31½′ N., long 68° 30′ 40″ W., showing a fixed red light, visible from a vessel between the bearings of W. ½ S., round southerly, and E. by N. ¼ N., and being 43 feet above high water, may be seen to a distance of about 10 miles. It is not lighted during the winter nights, namely, from 10th Dec. to 10th April. Here there is also a telegraph and pilot-station.

Rimouski.—About 3 miles W. by S. from Father Point is Barnaby Island, and between them is the road of Rimouski, where vessels anchor during the summer to take in cargoes of lumber. The best berth is considered to be with the eastern point of the island bearing W. by N., Rimouski Church S.S.W. ½ W., and Father Point E.N.E.; the depth will then be 4 fathoms, at low water spring tides, over mud bottom. Small vessels may anchor farther to the westward in 3 fathoms at low water, with the east end of the rocks, off the eastern point of Barnaby Island, bearing N.W. by W., and distant a quarter of a mile.

Off the eastern end of Barnaby Island a reef extends about one-quarter of a mile,

which may be passed in 4 fathoms. Barnaby Island is about 3 miles long, low, and wooded; there is a channel between it and the shore, which dries at low water, and should not be attempted even at high water by vessels drawing more than 8 feet. At the back of the island, on the main, are the Church and Village of Rimouski; here there is a landing-pier 2150 feet long, with a depth of 8½ feet at low water at its head; hence to Quebec the distance is 150 miles.

Near the middle of the outside of Barnaby Island there is a 3-fathom shoal extending out ¾ of a mile, and the reef off its western end runs out in a W.S.W. direction more than three-quarters of a mile. Between the western end of Barnaby Island and the mainland there is a large, high, and bare rock, which is distant from the island about two-thirds of a mile. Midway between the western points of the island and the bare rock, bearing North and South from each other, there are two fathoms at low water in Barnaby Road, over mud bottom, affording good anchorage to small vessels, in all but westerly winds. Rimouski Church in one with the eastern end of the rock will lead over the tail of the reef off the west end of Barnaby, and into this anchorage.

From the east end of Barnaby Island the eastern end of Biquette Island bears W. ½ N. 14½ miles, and Cape Arignole W. by S., southerly, 13½ miles. Cape Arignole and the east end of Bic Island lie due North and South of each other; the west end of the island bears N.W. from the cape, and the east end of the reef, which extends S.E. from the island, N. by E. ½ E.; the distance from the cape to the body of the island being about 2¼ miles.

Between Barnaby and Bic Island are the River Ottey and *Old Bic Harbour;* the former bears S.W. from Barnaby, distant about 5 miles, and is of little use to shipping except to water at; the latter is still further to the westward, about 3 miles, and is a very good place for small vessels to lie sheltered from westerly winds. This harbour has two round islands on the east side of it, which contract the entrance to two-thirds of a mile in width; the anchorage is midway between the westernmost island and the west side of the harbour, in 3 fathoms at low water, the west point bearing West, distant one-third of a mile; when coming from the N.W. for this anchorage, keep the westernmost of the two islands its own breadth open to the eastward of the west point of the harbour, as it will lead you clear of the eastern rock of the Cape Arignole Reef, which is the only danger in the way. A family resides here, who occasionally can furnish provisions, if necessary.

Within Bic Island is Cape Arignole, on the east side of which is the reef, which runs out E. by N. one mile. It consists of two rocks, the western end of the westernmost of which is always above water, and bears South 2⅔ miles, from the east end of the S.E. reef of Bic, and E. ¼ N., 1¼ mile, from the N.W. extremity of Cape Arignole; but it is distant only a quarter of a mile from the rocks off the east side of the cape; this rock is a quarter of a mile long, and very narrow. The eastern rock is small, covered at high tides, and one-third of a mile east from the other. These two rocks are very bold to the northward, and there are 5 or 6 fathoms of water between them. Vessels may pass between them and the main by keeping close to them, but can seldom have occasion to try so dangerous a passage. A good mark to clear this reef, when going in and out of Old Bic Harbour, is to keep the swashway* in the S.E. part of the harbour well open to the eastward of the west point of the harbour, bearing E.S.E. ¼ S.

On the west side of Cape Arignole is Ha-ha Bay, off the entrance to which there is excellent anchorage in 4 fathoms with easterly winds.

BIC ISLAND is of moderate height, and about 3 miles long in a direction parallel to the coast. It is thickly wooded, and affords supplies of water, excepting in very dry weather. On its east, west, and north sides are reefs. The N.E. reef is a small patch of black rocks, dry at low water, lying 400 fathoms from the east side of the island, and which may be cleared by bringing the Bicoques Islets on the east side of Old Bic Harbour open to the eastward of the S.E. reef, bearing nothing to the

* The swashway here mentioned is formed by a river running down between the mountains, and has, just to the westward of it, land appearing like chalk, but which really is white barren rock. This is a very good mark for small vessels coming from the westward, and intending to anchor at Old Bic, as the east part of the reef of the cape is covered at high water, and is all rocks, which dry when the tide is out.

eastward of S.E. by S. The S.E. reef extends off 1¼ mile E. by S. from the south-east end of the island, and has three rocks on its outer part, which are bold on the north and south sides, and always dry. The West Grounds are an extensive flat of slate, partly dry at low water, the outer point of which is distant three-quarters of a mile W. ½ S. from the west point of the island; it may be approached to 5 fathoms.

Biquette Island.—A short distance from Bic Island, on its northern side, is Biquette Island, which is small, being not more than half a mile in extent, and 100 feet high. The channel between is narrowed by some rocks extending off the east and south-east sides of Biquette, and by two or three lying off its west end, to nearly the distance of a mile, so that it is dangerous and intricate for a stranger to attempt this passage. The best time is at low water, when the dangers show, at which time from 5 to 9 fathoms, irregular soundings, will be obtained in mid-channel. The northern side of the island is steep-to, there being 15 fathoms at a short distance off.

The N.W. reef of Biquette is very dangerous; it lies 1¼ mile due West from the island, with the west end of Bic in one with the N.E. point of Ha-ha Bay, bearing S.S.E. ⅔ E., but this last-mentioned point is not so easily recognised, on account of the high land behind it. In approaching it from the westward, the north extremity of Cape Arignole should not be shut in behind the west point of Bic. This reef is composed of two rocks about 150 fathoms long, and just covered at high water, and like Biquette Island are steep-to on the north side, having 12 fathoms close to. At the distance of 2 miles North of the island there are 24 to 30 fathoms, and only 1½ mile from the reef there is the same depth, with bottom of sand. Further off no bottom will be found at 50 or 60 fathoms.

The lighthouse on Biquette Island shows a light of the first class, which is lighted from the 15th of April to the 15th of December. It is 112 feet above the sea, and revolves in 2 minutes. A gun is fired every hour during fogs and snow-storms.

Behind Bic Island, on the main, is the high land of Bic, the highest part of which is 1236 feet above the level of the sea, and bears S.W. by S. 2½ miles from the cape.

Alcide Reef.—The Alcide Reef, lying between Bic and the main, is very dangerous, as it is so bold all round that no warning whatever is given by the lead. It is a small rock of about 6 feet in extent, having 4 feet on it at low water, and stands on a rocky shoal 100 fathoms long, lying parallel to the coast. It lies due S.W. from the west point of Bic, distant 3¾ miles: and there is no close leading mark for clearing it, but if Mount Camille be not entirely shut in behind Cape Arignole vessels will be in no danger of it.

Under either end of Bic Island there is excellent anchorage, and also between it and the mainland, according to the wind; and vessels which may be met by an easterly wind, had better anchor than attempt to beat down the estuary in the long and foggy nights of the fall of the year. More shipwrecks have arisen in consequence of vessels obstinately endeavouring to beat down against an easterly gale with its accompanying fog, than from any other cause, and yet all that they can gain by such a course might be run in a few hours of fair wind.

TIDES, &c.—To the westward of Bic the first of the flood comes from the N.E., but there is very little stream of flood in neap-tides between Bic and the mainland, excepting close to the latter. In spring-tides it runs through the channel at the average rate of 1½ knot, being strongest near the mainland. It also runs between Bic and Biquette, but the stream extends only a very short distance outside the latter island.

The stream of flood continues its course along the mainland, passing inside, and also very close outside, of the Razades, Basque, and Apple Island: but nowhere extending a sufficient distance off shore to be of use to ships beating to the westward much below Green Island. That part of the stream of flood which passes farther out towards Bic, and also that which passes between Bic and Biquette, runs at its full rate only until half flood, after which it becomes gradually weaker, turning to the N.W., round the west end of the island, and finally to the North and N.E., towards the end of the tide.

The stream of flood becomes weaker, and of less duration, as you proceed to the westward of the islands. Half way between Bic and the Razades, there is slack

water for about an hour at the end of the ebb; after which a weak flood makes during the first quarter of that tide, at the rate of a quarter of a knot; and this is succeeded by the eddy flood at the rate of 1½ knot, or 2½ at the edge of the Bank of Soundings, which comes from the westward, running in the same direction as the ebb during the remainder of the flood-tide.

The set of the latter part of the flood to the northward, past the west end of Bic, should be remembered by vessels weighing from the western anchorage, or approaching the island with light winds, especially in the night, or thick weather.

The first of the ebb sets off shore, or from the southward, and this is more particularly remarkable at the eastern anchorage, but it only lasts for a very short time, after which the stream runs fairly between the islands, and along the coast to the eastward for the remainder of the tide. Its rate, in westerly winds, varies from 2 to 2½ knots, according as it is neap or spring tide, but it does not run so strongly in easterly winds.

The *South Bank* is both to the eastward and westward of Bic and Biquette, and the assistance which the soundings on it may afford to vessels at night, or in fogs, will be evident. If vessels, on approaching those islands from either direction, will but use their leads in reference to the soundings on the chart, and attend to the directions given, they can scarcely run foul of Biquette, or its reefs, as has so often occurred in times past; the 30 fathoms' edge of the South Bank is 7 miles northward of Barnaby Island, and 1½ mile northward of the N.W. reef of Biquette. Between those points the edge of the bank continues in a slightly undulating line. Everywhere within that line there is much less water, and to the northward of the South Bank, in every part, there is no bottom with from 60 to 80 fathoms of line, quite over to the north coast. The 30 fathoms' edge of the bank is 4 miles northward of the N.E. Razade Islet, and is nearly straight from that point eastward to off the N.W. reef of Biquette.

To the westward the South Bank becomes gradually wider, its northern edge pursuing a direction from off the Razades towards the north side of the Red-Islet Reef. There are nowhere more than 36 fathoms at low water upon it until you arrive within 2 miles of the line joining the N.E. extremities of the Red-Islet and Green Island Reefs, and this increase in the depth of water is a valuable indication to a vessel approaching that dangerous pass in thick weather, when the Green Island Light cannot be seen. There is anchorage in 10 or 12 fathoms, with good holding ground, all along the south coast from Bic to Green Island.

BIC ISLAND TO QUEBEC.

Between Bic and the Razades the coast of the mainland is high and rocky, and, with the exception of the Alcide Rock, is free from danger to small vessels, that may stand close in, but ships should not stand in further than 7 fathoms at low, and 9 fathoms at high water, because of a long ridge of rocky ground extending 5 miles to the E.N.E. from the N.E. Razade Islet, with 17 feet water near its eastern end. To clear every part of this ridge, keep Basque Island its own breadth open to the northward of the N.E. Razade.

The Razade Islets are two large rocks which bear from each other S.W. ¼ W. 1½ mile. The north-easternmost of these islets bears from the N.W. reef of Biquette S.W. ¾ W. nearly 15 miles, and is distant 1½ mile from the mainland to the southward. Between them and the shore there is no passage for vessels. W.S.W. from the N.E. Razade Islet, distant 5 miles, is Basque Island, about 1¼ mile long, and 200 fathoms wide. It is rocky, and there is no passage for ships between it and the shore, from which it is distant 2 miles. From the S.W. end of this island a sandy spit runs out a quarter of a mile to the southward. Close off the end of this spit there is a long and narrow hole, 4 or 5 fathoms deep at low water, in which small craft may be secured. The shoal water extends half a mile to the northward of Basque Island, and there is a reef of rocks to the N.W. and W. of its west point. On the western extremity of this reef, and about 600 fathoms distant from the island, is a round rock which shows at half tide.

Apple Island is W.S.W. ¼ W. nearly 3 miles from Basque Island. Between it and the shore there is no passage for ships, but its north side is very bold, there being 4 fathoms at the distance of a cable's length.

GREEN ISLAND.—The east end of this island is a long and narrow point of rocks, always above water, and running out more than half a mile from the trees towards Apple Island, which is distant from it 2¾ miles in an E.N.E. direction. Half this distance towards Apple Island is occupied by reefs of slate which dry at low water. In the remainder, there are a few feet of water, affording a passage for small schooners, which run in between Green Island and the main at high water.

A lighthouse stands on the north point of the island, nearly 2 miles from the eastern extremity of the rocks above water off its east point; and W.S.W ¼ W. 4¾ miles from Apple Island. It shows a fixed light, 60 feet above the sea, and can be seen in clear weather, from the distance of about 12, 14, or 17 miles, according as the height of the observer's eye is 10, 20, or 60 feet. The tower is square white, and 40 feet high. Behind the lighthouse, at the distance of about a quarter of a mile, and bearing S.S.E. ¼ E. from it, there is a white beacon, which, when brought in one with the lighthouse, will clear the tail of the Red-Islet Reef to the eastward.

The Green Island Reef, which is very dangerous, runs out from the lighthouse N.N.E. ½ E., 1¼ mile, to the 3-fathom mark. From its N.E. extremity it trends E. by S. till it joins the shoal water connecting Green and Apple Islands. Its N.W. side is straight, running S.W. by S. from its N.E. extremity to the shore close to the westward of the lighthouse, off which it extends only 200 fathoms to the N.W. The rocks on it dry at low water, nearly three-quarters of a mile out from the high-water mark. On the eastern side this reef may be safely approached by the lead to 7 or even 6 fathoms at low water, but on the north, north-west, and west sides, there is no bottom with the hand lead until close to it. Half a mile north, and north-west of it, there are between 20 and 30 fathoms of water. At the distance of 1 mile N.W. from its N.E. extremity, there are between 40 and 50 fathoms; and at the distance of 1½ mile, in the same direction, there is no bottom for a short space with 50 fathoms of line.

Deep as the water is to the northward of this dangerous reef, there is no other guide, in a thick fog when the light cannot be seen, but the soundings; yet it will never do to lose command of the vessel by rounding to, in the rapid ebb tide, (which sets upon the reef at the rate of 5 knots,) for the purpose of getting bottom in the usual way by the common deep-sea lead.

To clear Green Island Reef, in the day time and clear weather, keep the summit of the high land to the southward of Cape Arignole (or the high land of Bic), well open to the northward of Basque Island.

There is excellent anchorage in westerly winds under the Green Island Reef; it is the general rendezvous of vessels waiting for the flood, to beat through between Green and Red Islands. But as the first of the flood comes from the northward, and sets on the shoals, vessels had better not anchor with the light bearing to the westward of S.W. ½ W., or in less than 7 fathoms at low water. With that depth, on that bearing, they will be 2½ miles from the light, one mile from the eastern edge of the reef, and the same distance from the shoal water to the southward. If they wish still more room, they may choose their berth in 9, 10, or 11 fathoms, and will find a bottom of stiff mud in either depth.

The S.W. end of Green Island is low and bare, and has a dangerous reef running from it to the westward above a mile; this reef, which dries nearly the whole of its length, curves round to the northward, so that its outer edge bears S.W. by W. ¼ W. from the lighthouse. Its northern side is very steep, and the flood tide runs strongly over the tail of the reef towards Cacona, and the ebb the contrary. Mariners, therefore, should not approach it nearer than 25 fathoms, nor bring the light to bear to the northward of E.N.E.

About 3¼ miles S.W. by S. of the south-west end of Green Island is Cacona, a remarkable rocky peninsula 300 or 400 feet high, which is joined to the main by a low marshy isthmus. At 1½ mile south-westward of Cacona, and just to the northward of the stream of it are the *Percée Rocks*, two clusters, occupying an extent of 1½ mile. They lie about a mile from the main, and are nearly covered at high water. To the southward of them there is a narrow passage with 3½ fathoms in it; and you

will always go clear of them to the northward by keeping in not less than 8 fathoms water.

Riviere-du-Loup empties itself into the St. Lawrence $5\frac{3}{4}$ miles south-westward of Cacona Peninsula; but at its entrance are only 3 feet at low water of spring tides, though when within it vessels can lie aground and load in safety. Vessels anchor in $4\frac{1}{2}$ fathoms, mud, at from $\frac{3}{4}$ to a mile northward of Loup Point, the northern point of the river's mouth, with Riviere-du-Loup Church open westward of that point. Here there is a landing-pier 1667 feet long, with a depth of 16 feet at low water at its head; hence to Quebec the distance is 96 miles.

RED ISLAND is a low, flat islet, of a reddish colour, and without trees. A rocky bank or reef, $1\frac{1}{3}$ mile broad, extends $2\frac{1}{2}$ miles to the N.E., and is nearly dry in some parts at low water; but the islet is quite bold at its S.W. end. Anchorage in 10 fathoms, good holding-ground, may be had to the S.E. of this reef. This island is situated very nearly in the middle of the river, and bears from Green Island Light-house N.W. by W. $\frac{1}{2}$ W., distant $5\frac{1}{2}$ miles. A lighthouse is erected on Red Islet, which is 51 feet high and painted red, and exhibits a *red* fixed light at 75 feet above the high-water level of the river, visible about 12 miles. Near the east end of Red Island Reef a buoy, painted red, has been laid down; it lies in $5\frac{1}{2}$ fathoms, with the south side of Red Island in one with the north side of Hare Island; and the beacon on Green Island open a little to the eastward of the lighthouse. Should you be suddenly caught to the northward of Red Islet Reef by a shift of wind to the eastward, so that you cannot fetch round the east end of the reef and gain the south channel, you may safely bear up and run to the westward, by giving the N.W. sides of Red Island, White Island, and Hare Island, with its reefs, a berth of $1\frac{1}{2}$ or 2 miles, on your port hand, in passing. When you are 10 miles to the westward of Hare Island, you may safely haul across for the south channel. Observe, that by keeping Kamourasca Church just open to the westward of Grand Island, bearing S. by W. $\frac{1}{2}$ W., you will clear the S.W. end of Hare Island Reef (on which a red buoy is placed) in 3 fathoms at low water. As the river is all clear to the westward, there is no necessity for hauling across so near to the reef. There is an anchorage along the N.W. side of Hare Island in 6 to 8 fathoms water, but this is very close in.

HARE ISLAND, &c.—In the middle of this part of the river are Hare and White Islands with their reef, the Brandy Pots, &c., which divide this part of the river into two channels. They altogether occupy an extent of about 20 miles. The North Channel, though not that which is generally used, is clear, deep, and broad, and might be used advantageously under proper circumstances, as in the case of scant and strong N.W. winds; but with easterly winds and thick weather, or at night, it must not be attempted, as there are no leading marks, and the depth is too great and irregular to afford any guidance, besides the want of shelter or anchorage on the north shore. The South Channel, between the reefs and the south shore of the river, is generally preferred, as the tides are not so strong, nor the water so inconveniently deep, as in the other channel; besides which it has good anchorage in every part, and a sufficient depth of water for any ships. We will begin in our description of this range of islets and reefs at their western extremity.

Hare Island Bank is separated from the western end of Hare Island by a channel half a mile wide, in which are $3\frac{1}{2}$ to 4 fathoms. It is of great extent, lying along the north side of the South Channel for a distance of 9 miles, and $1\frac{1}{2}$ mile broad, with soundings over it of 1 to $2\frac{1}{2}$ fathoms. On the northern part of this bank, there is a portion always dry, which is covered with grass and bushes. All along the south side of the bank there is good anchorage in 7 fathoms, and no vessel should approach it nearer. The south-west end of the bank may be cleared in 3 fathoms, by keeping Kamourasca Church just open to the westward of Grand Island, bearing S. by W. $\frac{1}{2}$ W.

The south-west end of Hare Island Bank is marked by a red buoy, which lies with Kamourasca Church a little open to the westward of the large island of Kamourasca, and the north side of the Hare Island Reef in one with the north side of Hare Island, bearing N.E. $\frac{1}{4}$ N. At the east end of the bank there is a knoll of 12 feet marked by a red buoy, which lies with the west end of Hare Island bearing N.W. $\frac{1}{4}$ W., and the south side of Hare Island and the middle of White Island in one. To the east-

ward of this buoy, at two-thirds of a mile, is another knoll of $2\frac{1}{3}$ to 3 fathoms. From these knolls a narrow ridge, of $3\frac{1}{2}$ to 4 fathoms, runs N.E. by E., about 5 miles, to the Middle Knoll, on which there is a white buoy. This Middle Knoll is a small patch of rocks, upon which there are 10 feet at low water, with 4 to 8 fathoms close-to all round: it lies exactly in the line from the extreme of Loup Point to the N.W. point of the Brandy Pots, the latter bearing N.W. by W. $\frac{1}{4}$ W., and the south point of the same islands bearing N.W. $\frac{1}{2}$ W., $1\frac{1}{3}$ mile.

Barrett Ledge.—Between Barrett Ledge and the Middle Knoll there are 4 to 6 fathoms. Barrett Ledge is composed of two detached rocks. On the south-western rock lies a chequered black-and-white buoy, having the northern extremity of the mainland within Green Island, in a line with the northernmost high land of Cape Arignole, bearing N. 64° E.; the summit of the southernmost mountain of the high land of Kamourasca in one with the south point of Great Pilgrim Island, S. 30° W.; the eastern side of the trees on Hare Island in one with the west cape of the Bay of Rocks, (on the north shore,) N. 47° W.; and two houses near the River du Loup, S. 29° E.; the latter are the only two houses between the church and River du Loup. The rocks of Barrett Ledge bear from each other N. 63° E., and S. 63° W., one quarter of a mile. The N.E. rock has 10 feet over it; the S.W. has 12. Between them is a depth of 8 fathoms. The leading mark through this part of the channel, leaving Barrett Ledge and Middle Ground to the northward, and Percée Rocks and Pilgrim Shoal to the southward, is Green Island Lighthouse just shutting in with the S.W. point of the island, N.E. $\frac{3}{4}$ E.

Hare Island is about 7 miles long, and about a mile broad. On its southern side and near its eastern extremity lie some islets named the Brandy Pots, on the southern and smallest of which there is a telegraph. The northernmost Brandy Pot is the highest, being about 150 feet high, and is covered with trees; at its S.W. point there is a good spring, but it dries in very hot weather. A little to the eastward of the Brandy Pots, and connected with them at low water by a chain of rocks, is the Noggin, a small islet covered with trees. Half-way between the Noggin and the east end of Hare Island is a reef of rocks, which dries at low water; it lies close to Hare Island, and therefore not in the way of shipping, and by keeping in 7 fathoms you will always go clear.

To the westward of the Brandy Pots, the south side of Hare Island has a flat of hard ground extending from it, 4 miles in length, and about half a mile in breadth. The whole of this side of the island is bounded with rocks.

From the east end of Hare Island a ledge of rocks extends to the north-eastward for about 5 miles, and dries for the greater part of that distance. This ridge is extremely dangerous, because there is no mark to clear it, and the flood-tide sets strongly upon and over it into the North Channel. Near the middle of the reef is the White Islet, which is small, low, and covered with trees. On the N.E. end of the reef, the north side of Hare Island and the south side of White Islet are touching, and the west point of Cacona bears S.E. $\frac{1}{2}$ E. Vessels should come no nearer to it than 10 fathoms at low water: here there is generally a black buoy. The passage between the N.E. end of the reef and Red Islet is $6\frac{1}{2}$ miles wide, and free from danger.

THE PILGRIMS are five islets lying at the distance of $1\frac{1}{2}$ mile from the shore on the south side of the South Channel, with no passage between. They are about $4\frac{1}{2}$ miles in extent, and are connected together by reefs, which dry at low water. The largest islet is also the highest, being about 300 feet high, and partially covered with trees: abreast of it is anchorage for small vessels, in $2\frac{1}{2}$ fathoms water. Outside the Pilgrims shoal water of 2 fathoms extends to the distance of about half a mile, and thence it extends to the eastward and westward parallel to the shore, from which it is distant fully 3 miles. To the eastward of the Pilgrims this shoal water takes the name of the Banc du Loup, and to the westward of those islands the Banc de St. André.

The Pilgrim Shoal is long and narrow, and runs for the distance of 4 miles in a direction nearly parallel to the shore, from which it is distant only 2 miles. On the northern side there is a black buoy, lying in $4\frac{1}{2}$ fathoms, with the west ends of Hare and Great Pilgrim Islands in a line bearing N.N.W. $\frac{1}{4}$ W., and S.S.E. $\frac{1}{4}$ E. The eastern end of the shoal, in 3 fathoms, lies with the N.E. end of the trees of Hare Island and the eastern side of the Brandy Pots in one, bearing N. $\frac{3}{4}$ E. On this

shoal there are 2¼ fathoms. The leading-mark through, between Pilgrim Shoal and Hare Island, is the north side of Burnt Island just open of Grand Island, bearing S.W. ½ W.

THE KAMOURASCA ISLANDS lie nearly 6 miles to the westward of the Pilgrims, and 2½ miles from the shore. Behind them are the church and settlement of the same name. The islands altogether occupy a space of about 3 miles; the two northern named Grand and Burnt Islands are steep-to on the northern sides, and must be approached with care. Off this part of the coast there is good anchorage, with the Church of Kamourasca just open to the westward of Crow Island, bearing S.E. ½ E., and Grand Island just open to the northward of Burnt Island. Here you will anchor well sheltered from the prevailing winds, but exposed to the N.W.; the depth is 7 fathoms, stiff mud, at a short distance from the 3-fathoms edge of the bank. Large vessels wishing for more room may anchor farther out anywhere to the westward.

From the Kamourasca Islands a shoal bank lines the coast to the westward, which may be approached to the depth of 7 fathoms u[illegible] the buoy on the shoal of St. Ann.

From Crow Island Cape Diable bears S.W. ½ W., distant nearly 3 miles; from the cape, in the direction of Crow Island, a rocky reef runs off, the easternmost part of which is covered at a quarter-flood. At 2½ miles above Cape Diable is Point St. Denis, to the southward of which is a little cove, having good riding opposite at 1½ mile from the shore, in from 6 to 8 fathoms.

Point Origneaux lies nearly 2 miles westward of Point St. Denis; here there is a landing-pier 1200 feet long, and with 15 feet of water at its head at low tide; hence to Quebec the distance is 66 miles.

The land from St. Denis runs 5 miles south-westward to Point Ouelle, and is all low, with rocks before it. From Point Ouelle a bank runs off, and lines the shore for a distance of 8 miles to the westward, as far as Point St. Roque, and extends off the coast fully 4 miles; over this sand and mud flat are scattered many large stones. Just under Point Ouelle is the river leading up to the church and settlement, which will admit vessels drawing from 10 to 15 feet water. The coast between Points Ouelle and St. Roque bends inwards, forming the Bay of St. Ann, which is shoal all over by reason of the sand and mud flat previously mentioned; at the back of this bay is a settlement of the same name. At the northern edge of this bank, 3½ miles N.W. from Ouelle Point, is a black buoy, and at 4 miles N.N.W. from St. Roque is a lightvessel, both of which must always be left on the port or south side when bound upwards.

THE NORTH SHORE FROM THE SAGUENAY TO COUDRES ISLAND.—From the Saguenay to Coudres Island the northern shore of the river is bold and mountainous. In most parts the granitic hills rise immediately from the river, forming steep precipitous headlands. Near the entrance of the Saguenay these hills are about 1000 feet high, but those of the Eboulemens attain an elevation of 2547 feet above the tide-waters of the river.

At 6½ miles S.W. of Lark Point is situated Cape Basque, and about 1½ mile to the northward of the cape lies Echafaud Islet, a small rocky islet in the mouth of a cove; it bears 5 miles W. ½ S. from the S.E. extreme of Lark Reef, the shoal of which extends as far as this place. Basque Road is a well-sheltered anchorage lying off this, the best position being the Echafaud bearing W.N.W., rather less than a mile distant, in 10 or 11 fathoms, over clay bottom.

The Bay of Rocks is about 2½ miles south-westward from Cape Basque, and affords shelter only to boats. At 5½ miles S.W. ¾ S. of Cape Basque is Cape Dogs, which is quite bold and high; and similar to it is Cape Salmon, which is situated S.W. ¼ S., 9¾ miles distant from it. About 1½ mile farther to the westward is Port Salmon, which, like Port Parsley and Shettle Port, to the eastward, are only boat harbours. Hence to Quebec the settlements are nearly continuous. At 5 miles S.W. by W. ¼ W. from Cape Salmon is situated Cape Eagle, which is of the same character.

MURRAY BAY.—This bay lies 6½ miles W. by S. from Cape Eagle, and is 1½ mile wide, and nearly as deep. A rapid and unnavigable river falls into the head of [illegible]; and the bay is nearly all dry at low water, except the shallow channels leading to the river. The anchorage is close under the high rocky shore, a little to the eastward of the bay; with Point Gaze, its west point, bearing S.W. ¼ W.; Point Pique, its east point, W. by N., about 400 fathoms; and Point Heu E.N.E. ¼ E.

Mal Bay.—Goose Cape lies 9½ miles S.W. ½ S. from Point Gaze; it is bold and rocky, and forms the western extremity of Mal Bay, while Point Gaze, on the west of Murray Bay, forms the eastern extremity. Mal Bay is formed by a slight incurving of the coast, and shoals extend a quarter of a mile off shore, and there is no good anchorage in it. There is a landing-pier here 475 feet long, and with a depth of 18 feet at its head at low water; hence to Quebec the distance is 60 miles.

At 3 miles W. by S. from Goose Cape is situated Cape Martin. Between these capes the shore is very slightly indented, and the shoals dry out about one-quarter of a mile, that is, nearly to a line joining the two capes. About half way between them, but rather nearer Goose Cape, a stream descends a ravine, and off the mouth of the latter there is a very large boulder stone named the Grosse Rock. Anchorage may be obtained in 7 fathoms, with Grosse Rock bearing N. by W.; here you will be sheltered from the tides, which run past Goose Cape with great rapidity, and occasion at times a strong rippling.

Eboulemens Bay is between Capes St. Martin and St. Joseph, and is full of mud and large stones, but there is a landing-pier in it, 920 feet long, with a depth of 9½ feet at its head at low water; hence to Quebec the distance is 53 miles.

COUDRES ISLAND.—This island is ab.. 5½ miles long and 2½ wide. The east end of the island bears from Cape Martin S.W. by S. 2¾ miles. Rocks and shoals line its south shore, and extend a mile out from it, as they do also off its N.E. point; but the north side of the island is bold for about 2 miles to the eastward of Prairie Bay. Prairie Bay lies near the centre of the north side of Coudres Island, and off Point Prairie, its west point, a shoal, covered at high water, extends 620 fathoms to the N.W. from high-water mark, and shelters the bay from S.W. winds. The line of Notre Dame Church in one with the N.E. end of the low clay cliff of Point St. Joseph passes 100 fathoms within the 3-fathoms north extreme of this shoal; but if the church be kept on with the N.W. end of the same cliff, it will lead clear of the shoal in deep water. The cross mark for the north point of the shoal is St. Pierre Church and the east side of St. Paul's Bay in one.

THE NORTH, MIDDLE, AND SOUTH CHANNELS TO QUEBEC.

THE NORTH CHANNEL lies to the northward of Coudres Island, and runs along the northern shore of the river; and on the south side of it is the line of shoals which extends from the west side of Coudres Island to Burnt Cape Ledge and the Bayfield Isles. It is a fine channel, and although not so convenient for the purposes of navigation as the South Channel, which is the most generally used, still it may be of service at times, as it frequently remains open, or free from ice, some time after the South Channel becomes unnavigable in the fall of the year.

The eastern entrance to this channel is between the reef which extends a mile to the E.N.E. of the N.E. end of Coudres Island and the shoals off Eboulemens Bay, where there is a large settlement and a landing-pier. You may clear the shoals, on each side of this part of the channel, by keeping one mile from the northern shore, or not approaching it nearer than 10 or 12 fathoms water; the mark for clearing the shoals westward of Cape St. Joseph being Cape Goose and Cape Martin in one E. by N.

ST. PAUL'S BAY, opposite the west end of Coudres Island, is shoal and rocky; it has a great ripple at some distance off, around Cape Corbeau, its eastern side. Its western point, named Cape Labaie, has shoals of mud and large stones extending off it for three-quarters of a mile, and which also extend for 11½ miles to the southwestward to an equal distance off shore; to clear them off Labaie, you must bring the extreme western Capes Rouge and Gribanne open to the southward of Cape Maillard S.W. ½ W.

After clearing the N.W. reef of Coudres Island by the before-mentioned mark, there is a fine straight channel from 1¼ to 2½ miles broad, entirely free from danger, and extending 18 or 19 miles to the Burnt Cape Ledge. The depth does not exceed 17 fathoms, and there is good anchorage towards the sides, out of the strength of the

tides, which run stronger and with more sea in this long and open reach than in the South Channel.

The southern side of this channel is a bank, extending, as before mentioned, from Coudres Island to Burnt Cape Ledge. Its edge is nearly parallel with the coast, and is easily followed.

The Neptune Rock is nearly 15 miles S.W. from Coudres Island, within the edge of this southern shoal, and is easily recognised.

The North Shore is high, and, as previously mentioned, is lined with shoals. At 1¼ mile S.W. of Cape Maillard is a landing-place named Abattis, 2 miles to the south-west of which is the Sault au Cochon, where the shoals, which line the shore, cease. There is only one landing-place, La Gribanne, between Abattis and Cape Tourmente, a distance of 11 miles. To the westward of the Sault au Cochon the mountainous and uninhabited coast is quite bold, the high and precipitous capes, of various granitic rocks, being washed by the river as far as Cape Tourmente, where the Seminaire Bank commences, and the mountains trend to the N.W. away from the shore.

The Burnt Cape Ledge, nearly opposite Cape Brulé, from which it is distant 1½ mile, is composed of slate rocks, and is very dangerous. Its S.W. end is always above water, and bears S.W. ½ W., 4½ miles, from the Neptune Rock.

The Brulé Banks are to the westward of the Burnt Cape Ledge, and are joined to it by shoal water. Their northern edge is only 600 fathoms from Cape Brulé, and the depth of water between them is 7 to 10 fathoms. Between their N.E. point and Burnt Cape Ledge there is a bay, but it has no passage through to the westward, and must therefore be avoided. On the N.E. point of the Brulé Banks, in 3 fathoms, the west end of the Burnt Cape Ledge is in one with the east side of Heron Island, bearing S.E.

The *Traverse Spit* lies between the Brulé Banks and the eastern point of Orleans Island, its N.E. part forming, with the S.W. part of the Brulé Banks, the Eastern Narrows of the North Traverse, which is only 250 fathoms wide; 4 fathoms can be carried through within this breadth. The Traverse Spit and the Horse Shoe Bank to the N.W. of it, as well as the Brulé Banks, dry, for the most part, soon after half-ebb, and thereby greatly lessen the difficulty of the passage.

Four fathoms can be carried through the Traverse, and the mark for leading through the Eastern Narrows into it is, the S.W. point of Reaux Island and Point St. Vallier in one, bearing S.S.W. ¾ W. From the Eastern Narrows the Channel runs S.W. by W. close along the southern edge of the Traverse Spit, leaving all other shoals to the southward. At the distance of 2½ miles you come to the Western Narrows, which are also 250 fathoms wide and 4¼ fathoms deep. The Western Narrows are between the Traverse Spit and the West Sand, a sand which is 1¼ mile long, and has 7 feet least water upon it; its eastern extremity is, or was, marked by a chequered buoy. The mark for leading through these narrows, after having arrived as far as the east end of the West Sand, (which will be when Berthier Church is just open of the S.W. point of Reaux Island, bearing S. ¼ W.,) is Points St. John and Dauphin, on the south side of Orleans Island, in one, bearing S.W. ½ W.

Having cleared the Western Narrows, there is a fine clear passage between Orleans Island and the banks of Madame Island, not less than two-thirds of a mile wide and with good anchorage all the way to the South Channel at Point St. John, a distance of nearly 7 miles.

The channel to the northward of the Island of Orleans has water enough for the largest ships, but it is too narrow and intricate for general use. There are also no leading marks which could be made available.

THE MIDDLE CHANNEL lies between the shoals and islands which form the northern side of the South Channel, and the long line of shoals and reefs which extend from Coudres Island to Reaux Island, at the east end of the Island of Orleans. The entrance, to the north of the Seal Islands, has not more than 3 fathoms at low water; but having passed this shallow part, there is depth and room enough for the largest ships, until you arrive at the Bayfield Islands, where the Middle Traverse communicates with the South Traverse by various narrow passages between the islands. There is plenty of water at all times in most of these passages, but the tides set strongly through them: and though it would be possible to take even the largest

ships up to Quebec by the Middle Channel, were it requisite from any cause to do so, yet they are too intricate and difficult for general navigation.

THE SOUTH TRAVERSE.—Between Point St. Roque and St. Thomas the south shore of the St. Lawrence is low, but gradually rises into wooded ridges of considerable elevation at the distance of a few miles back from the river. All along the south shore the houses are numerous, and are grouped into villages round the Churches of St. Jean, L'Islet, St. Ignace, and St. Thomas, where supplies may always be obtained.

L'Islet.—The Churches of St. Roque, St. Jean, and L'Islet stand low down near the water's edge, and are distant nearly 7 miles from each other, the last being opposite Goose Island Reef, and having near it a landing-pier 1200 feet long, with a depth of 8½ feet at its head at low water; hence to Quebec the distance is 40 miles. The River Jolie lies about 2¾ miles above or to the south-westward of the Church of St. Jean: and the River Trois Saumons a mile farther in the same direction: both afford shelter to small craft and good landing for boats, excepting at low water, and there are 12 feet water in their entrances at high water, spring-tides. At 13½ miles to the westward of the Church of St. Jean lies that of St. Ignace, which stands about three-quarters of a mile back from Cape St. Ignace, a small round, rocky peninsula, which will be easily recognised. At 5¼ miles to the westward of the Church of St. Ignace lies that of St. Thomas, which stands on the western bank of the River Sud, and nearly opposite the west end of Crane Island. The River Sud falls into the St. Lawrence by a cascade of 30 feet just within its entrance.

In this extent of coast shallow water extends out to a considerable distance, and is generally called the South Bank. The part of this bank which projects 4 miles out from Point St. Roque to the lightvessel at the Traverse, and is known by the name of the Shoal of St. Roque, is extremely dangerous, being composed of a thin covering of sand, mud, and stones, over slate rock. Over these shoals the depth of water in many parts does not exceed 9 or 10 feet.

The Narrows of the South Traverse lie between these shoals and the Middle Ground; the east end of the Middle Ground lies with the east end of Coudres Island N.W. by W., distant 3½ miles. The eastern end of the narrowest part of this channel is pointed out by a *lightvessel*, moored in 3 fathoms, just off the north-east edge of the St. Roque Shoals, and bearing two fixed lights, of which the main light is 4 feet higher than the other; they are visible at a distance of about 9 miles in clear weather, and lie 5½ miles W.S.W. ½ S. from the black buoy* on St. Ann's Shoal; these must be left on your port hand going up. The utmost attention is requisite here, as it is considered, and with reason, to be the most intricate part of the river, and the currents are various, irregular, and strong. In the middle of the river a bank stretches all the way from Hare Island to the Middle Ground; it is generally about a mile wide, with 8 to 14 fathoms on it; this was formerly named the English Bank. The soundings are regular, and the bottom sand and mud, affording good anchorage.

At nearly a mile W. by S. of the lightvessel is a red buoy on the Middle Ground, to be left on the starboard hand; and nearly opposite is a black buoy on the Shoal of St. Roque, to be left on your port hand: and 2 miles S.W. from this is a black buoy, to be left on the port hand, opposite to which is a red buoy on the S.W. end of the Middle Ground, to be left on your starboard hand. The narrows extend from these latter buoys to the lightvessel, a distance of 3 miles, and are little more than one quarter of a mile wide, with 4 to 10 fathoms at low water, spring tides. Another black buoy lies nearly 2½ miles S.W. ½ S. from the last black buoy, and is to be left on your port hand; there is also a black buoy on a 13 feet patch off St. Jean, 2 miles further to the S.S.-westward, and a little farther on is a chequered black-and-white buoy, on the Traverse Patch, of 3 fathoms, to be left on your starboard hand; but there is plenty of water on the north side of this buoy. Hence a S.W. by S. course, 2½ miles, brings you abreast of the Stone Pillar, on which is a revolving light.

The Pillars, &c.—The Avignon, a half-tide rock, round on the top, and dry at three-quarters ebb, lies at the distance of 2 cables' lengths S.E. from the body of the

* By a recent official notice, all the buoys on the south bank are said to be black, and those on the north banks red, with a few exceptions.

Stone Pillar, with a depth of 7 fathoms close to it. Crane Island, kept well open to the southward of the large reef off Goose Island, leads clear to the southward of it. The Pilier Boisé, or Woody Pillar, a high round rock, with trees on the western part of it, lies at a mile and a quarter westward of the Stone Pillar. At half a mile to the east of it is a rock named the Middle Rock, with a beacon upon it, dry at half-ebb. To the northward of the Piliers or Pillars are the Seal Islands and Reefs, having an extent of nearly 4 miles N.E. by E. and S.W. by W. In a considerable extent the rocks which form these reefs are dry at low water. The bank on which they lie is extensive on the N.E. towards Coudres Island. At $1\frac{1}{4}$ mile S.W. $\frac{1}{2}$ W. from the Stone Pillar, is the commencement of a ledge of high rocks, named the Goose Island Reef, extending thence $3\frac{3}{4}$ miles S.W. $\frac{1}{2}$ W., the western part of which is composed of rocks, always above water, and steep-to on their south side. There is a narrow channel, only fit for small craft, between it and the N.E. end of Goose Island, to which it lies parallel at the distance of a long half-mile.

On the *Stone Pillar* there is a light revolving every $1\frac{1}{4}$ minute. The building is of stone, conical shaped, painted white, and 38 feet high, and the light being shown at an elevation of 68 feet above the water, can be seen about 13 miles off.

GOOSE ISLAND is connected by low meadow land to Crane Island, the whole of which occupies an extent of 11 miles in the direction of N.E. $\frac{1}{2}$ E. and S.W. $\frac{1}{2}$ W. From the south side of this low land a shallow flat runs off nearly a mile, and narrows the channel very much as you approach the Beaujeu Bank, on each end of which a white buoy is now placed. The eastern buoy lies with Onion Island N.W. by W. $\frac{1}{4}$ W., and the western buoy with the farmhouse on Crane Island N. by W. A farmhouse may be seen on Goose Island, to the eastward of which, and close to low-water mark, there is a large rock named the Hospital Rock. Two miles and a half westward of this rock is a long reef, dry at low water, but it is out of the fairway and close along the island. The north side of Crane Island is in a good state of cultivation. On drawing toward it you will see a farmhouse on the east end. To the S.E., at half a mile from this house, is the edge of the Beaujeu Bank, a narrow shoal, which extends 2 miles thence N.E. $\frac{1}{2}$ E., and has, on its shallowest part, only 8 feet at low water. It is separated from the flat that runs off from the main by a channel, having 4 to 5 fathoms in it, but just within the west entrance of this channel lies a knoll, of only 12 feet. The channel between Beaujeu Bank and the eastern end of Crane Island has 4 to 5 fathoms in it; but its breadth scarcely exceeds a quarter of a mile. Two red buoys are placed on the N.W. side of this channel, opposite the white buoys on the Beaujeu Bank.

BAYFIELD ISLANDS lie to the west of Crane Island. Exclusive of a number of small islets and rocks, the principal are Canoe Isle on the north side of Crane Island; the Margaret Island; next westward is the Grosse Island, and the Isle du Reaux, and the westernmost is Madame. The whole of these islands, from Crane Island to the west end of Madame Island, occupy a space of 14 miles. There are several passages between the isles, but they are too intricate to be understood without reference to the chart.

A reef of rocks extends half a mile from the western end of Crane Island, and dries at low water; and a shallow spit runs out $1\frac{1}{4}$ mile farther westward, on which a red buoy is placed, with St. Thomas's Church bearing S.S.E. $\frac{1}{4}$ S. Grosse Island is inhabited, and is 2 miles in length, lying N.E. by E. and S.W. by W.

Reaux Island is about 150 feet high, and rather longer than Grosse Island, but narrower. Madame Island is somewhat smaller than Reaux Island; both are covered with trees. A rocky reef extends S.W. by W. $2\frac{1}{2}$ miles from Madame Island. and dries for the most part at low water; and ships ought not to go nearer to it than 7 or 8 fathoms water. The mark to clear it is, some part of Reaux Island kept open to the southward of Madame Island. The western extremity of the reef lies with St. Vallier's Church bearing S. $\frac{1}{2}$ E. A red buoy now marks the western point of this reef, which here divides the western extreme of the north from the south channel.

At Grosse Island is the quarantine station, the entrance to which lies between the island and Margaret Island, and is marked by a red buoy on the south, and a chequered buoy on the north side; your course in from the South Channel is about N. by E.

POINT ST. THOMAS ON THE SOUTHERN SHORE.—Point St. Thomas is low, and lies 3 miles W. ½ N. from the entrance of the River Sud.

From the land of St. Thomas a flat, or mud-bank, partly dry at low water, named the Bank of St. Thomas, extends more than half-way over toward Crane Island. Its northern extremity is 2 miles S.W. by W. from the south point of the island: at this extremity a black buoy is now placed, with St. Thomas's Church bearing S. ¾ E.

The *Wye Rocks* lie immediately to the north of the Point of St. Thomas. They are separated from the western part of the Bank of St. Thomas by a channel nearly a quarter of a mile wide and 4 fathoms deep. They form a narrow ridge 400 fathoms long in a S.W. direction, and have 4 feet least water at their western end. The clearing mark is Belle Chasse Island and Point St. Vallier touching; this leads about 2 cables to the northward of the rocks, and also along the northern edge of the Bank of St. Thomas in 4 fathoms.

Berthier.—At 5¾ miles W.S.W. ½ W. from Point St. Thomas is situated Berthier Church and Village. The intermediate shore is rocky and rather low, with shoal water extending off it a third of a mile. Close to the eastward of the church is situated the Trou de Berthier, a tide harbour for the river craft, dry at low water; here there is also a landing-pier 587 feet long, with a depth of 15 feet at its head at low water; hence to Quebec the distance is 20 miles.

Belle Chasse Island lies parallel to the shore, and its west point bears W. by N., a mile, from Berthier Church, and not more than 2¼ fathoms can be carried through between the island and the main. The island is composed of high, steep, and bare greywacke rocks. North from the centre of the island, and at a distance of 110 fathoms, lies a small pointed rock, nearly dry at low water, and with from 4 to 6 fathoms between it and the island. A shallow bay lies within the island to the south-westward, with the small river Belle Chasse running into it.

At 2½ miles W. ½ S. from Berthier Church is situated Point St. Vallier, which is remarkable as being higher than any other point below it on the south shore, above the Traverse. At 3½ miles W. by S. from Point St. Vallier is situated Point St. Michel, which is very low. Reefs of slate, dry at low water, extend a considerable distance to the N.E. from both these points, but especially the latter. On the shore of the shoal bay between Points St. Michel and St. Vallier, and at 2 miles S.W. by W. from the extremity of the latter, stand the church and village of St. Vallier. The Bank of St. Vallier fills the whole bay between these points, and extends nearly three-quarters of a mile to the N.E. from Point St. Michel. At 2 miles W. by S. from Point St. Michel stand the Village and Church of the same name, and at Point Durantaye, a mile to the westward of the church, shoal water extends only 100 fathoms off shore.

The Beaumont Reefs commence from Point Durantaye, extending more and more from the shore until opposite Point St. Lawrence, on the Isle of Orleans, where their northern edge, in 3 fathoms, is nearly three-quarters of a mile off shore. They extend less from the shore as we proceed farther to the westward, and may be considered to cease about a mile to the westward of Roy's Mill, the shoal water there reaching only 130 fathoms from the shore. These shoals are rocky, and dry in part at low water; and their northern edge is steep, with very deep water close-to. The warning by the lead is insufficient in a vessel going fast, and therefore these shoals should be approached with great caution. A black buoy is now placed on the northern edge of the Beaumont Reefs, with St. Lawrence Church bearing North.

At 5 miles W.S.W. of St. Michel stand Beaumont Church and Beaumont Mill, and a mile to the westward of Beaumont Mill is situated Roy's Mill, where there is a water-fall. At 6½ miles from Beaumont Church stands St. Joseph Church, on Point Levi. Between Point Levi and Roy's Mill the shoal water nowhere extends above a quarter of a mile from the shore. Off Point Levi a reef extends 180 fathoms to the northward, and should not be approached nearer than 10 fathoms from between the north and west, or 7 fathoms from between north and east.

ISLAND OF ORLEANS.—This island is 18 miles long, and its extreme breadth is 4⅔ miles. It rises gradually from generally steep banks to the central elevation, estimated at 350 or 400 feet above the water. It forms by its southern shore the northern side of the South Channel, from opposite Madame Reef to within 3 miles of Quebec, a distance of nearly 14 miles. Its northern shore is flat and muddy, with a reef of rocks running along it; but, on the southern side, it is fine sand, with a few pointed rocks rising up here and there.

The Churches of St. John and St. Lawrence stand near the southern shore, the distance between them being 5½ miles; this part is highly diversified with gardens and houses. *Patrick's Hole* is a little to the westward of Point St. Lawrence, and is a safe and well-sheltered cove, where vessels outward-bound commonly anchor in 10, 12, or 14 fathoms, previously to taking their final departure; the ground cannot be considered good, but it is well sheltered from easterly gales, and the river here is bold on both sides, and is about 1¼ mile wide. On the western part of the point is a cluster of neat houses, where accommodations of all kinds may be obtained.

About a mile eastward of the west end of Orleans are the Marand Rocks, running out 2¼ cables' lengths from the shore; they have 6 to 9 feet water over them, and 10 fathoms in sailing past them. At the S.W. part of the island are other rocks, which dry at low water; these are close to the land, and may be safely passed in 10 fathoms water. The Church of St. Peter is situated about 4 miles from the western point, and nearly opposite to the Falls of Montmorency.

QUEBEC.—The Basin of Quebec is about 1¾ mile wide from Point Levi across to the shore of Beaufort, and about three miles long from the west end of Orleans to the India Wharf at Quebec. The Harbour of Quebec extends from off the River St. Charles up to the Chaudière River, a distance of 5 or 6 miles.

The Port of Quebec comprehends all the space between Barnaby Island and the first rapid above Montreal. Information respecting quarantine is given to the commander of vessels by the pilots when they first come aboard; and a book containing the bye-laws and harbour regulations of the Trinity Board is delivered to each vessel on her arrival by the harbour-master.

The City of Quebec* is situated on Cape Diamond, and it is difficult to imagine anything more beautiful than the view which suddenly bursts upon a stranger ascending the St. Lawrence and entering the Basin of Quebec, as the vessel opens out the Falls of Montmorenci on the one hand, and the City of Quebec on the other.

The navigation of the River St. Lawrence is closed by the ice from about the 25th November to the 1st May. The navigation sometimes, although rarely, closes by the middle of November, and remains closed to the 8th or 10th of May; at others it would be possible to navigate it till near Christmas, and ships have arrived in the middle of April; but these are extraordinary seasons, and the period first named is that during which the navigation usually remains closed; the river seldom or never freezes below Quebec, and only occasionally opposite the city; but it is full of heavy ice, moving up and down with the tides with irresistible force. There is generally, but not always, a bridge of packed ice formed 5 or 6 miles above Quebec; and higher up, as far as Lake Ontario, the St. Lawrence is everywhere frozen across, excepting in places where the current is very strong.

The River St. Lawrence extends from Quebec to the City of Montreal, from which it is distant 155 miles, and from the Island of Bic 270 miles; it is navigable to the Rapids of Richelieu for vessels of 600 tons; the impediments are few, and those very easily surmounted.

From Quebec, the shores of which are exceedingly lofty, the hills gradually decline, and become less elevated, until you reach the River St. Maurice, where the tide entirely ceases: here on the north side of the river, stands the town of the Trois Rivières, or Three Rivers, beyond which, at the distance of 33 miles, is the Richelieu Rapid, at the entrance of which, and above the Lake St. Pierre, is the town of William Henry, formerly named Sorel. Lake St. Pierre is 22 miles long, and in some places nearly 8 in breadth: but its western part is encumbered with numerous islands, which divide it into several channels, two of which are navigable; but that on the south is the cleanest, deepest, and best, and is pointed out by a lightvessel and buoy. The banks here are low, and shelve off to a considerable distance, leaving only a narrow channel of from 12 to 18 feet water: the river here is obstructed by masses of rock, and at the ebb-tide the descent of the rapid becomes so great, that the utmost caution must be taken to pass it; vessels, therefore, should wait for a proper time of tide, and, if necessary, they may anchor at the bottom of the rapid until a proper oppor-

* The longitude of the flagstaff at the King's bastion of the citadel at Quebec, as determined by Admiral Bayfield, from a number of lunar and sidereal observations, is 71° 12′ 44″ West of Greenwich. But Lieut. Ashe, R.N., in 1857, by the aid of the electric telegraph, in connexion with Cambridge Observatory, U.S., which served him as a primary meridian, places it 28″·5 (1·9s. of time) further eastward, or in 71° 12′ 15″·5 W.

tunity occurs. Hence to Montreal the banks are of moderate height, and uniformly level.

Montreal is estimated as the most fertile part of Lower Canada: its port is convenient, and situated on the S.E. of the city. The harbour is not large, but vessels drawing 15 feet water can lie close to the shore, near the Market Gate, and both deliver and receive their cargoes with expedition; the depth is generally from 3 to 4½ fathoms; its great inconvenience arises from the Rapid of St. Mary, which is about a mile below, whose current is sometimes so powerful, that without the benefit of a N.E. wind, or a steam-boat, vessels may be detained for weeks, within two miles of the spot where their freight should be delivered.

Between Quebec and Montreal steamers regularly ply; and ships bound to Montreal with cargoes, may engage steamers for towing at Quebec. There is a regular rate of charges for towing ships, according to their draught of water and breadth of beam, for the whole or any intermediate distance that may be required.

TIDES IN THE RIVER ST. LAWRENCE.

On the days of full and change, it is high water in the river as follows:—Near Cape de Monts, on the north side, 1h. 52m. In Manicouagon Bay, at 2h.; here spring-tides rise 12, and neaps 7 feet. At Bersimis Point, 2h. On the south coast, near Cape Chatte, the time is 1¾h. Here spring-tides rise from 12 to 14, and neaps 8 feet. Off the river Matan, the time is 2h.; springs rise 12 and neaps 6 feet. At Grand Metis Bay, the time is 2h. 10m.; springs rise 13, and neaps 8 feet. Off shore hereabout, the current on the surface always runs downward, from 1½ to 2½ knots.

The time of high water at Green Island, is 2h. 45m.; spring-tides rise 16 and neaps 9½ feet. In the middle of the river, off the eastern part of this island, the flood from the north shore turns to the southward and sets thence eastward off the south shore; and thus below the Isle Bic, the stream sets constantly downward, at the rate of 2 to 3 knots, as before mentioned on page 73.

At Kamourasca, 4h.; at the Brandy Pots, 3h.; in the Traverse, 4h. 30m. Off Point St. Roch or Roque, 4h. 50m. Here it ebbs 6¾ hours, and flows 5¼. At the Isle Bic the stream never bends to the westward until an hour's flood by the shore. The neap-floods are here very weak; and, with westerly winds, none are perceptible. A spring-flood is, however, always found, within 4 miles of the shore, between Father Point and Bic. The ebb-stream from the River Saguenay sets with great force south-eastward toward Red Island Bank. Off Green Island, between it and Red Islet, there is little or no flood, but a great ripple. All the way hence to Quebec, the tide, when regular, flows tide and quarter-tide; but it is influenced greatly by the wind, and by no means to be depended on, as to its running, anywhere below Hare Island, though above it there is a regular stream of ebb and flood.

Between Barnaby and Bic the stream of flood sets in from the N.E. at the rate of about 2 knots; then fair through the channel until last quarter flood, when it sets to the N.W. by the west end of Bic, and then gradually to the N.E. as the flood slacks. The whole of the ebb, both to the eastward and westward of the island, sets strongly to the N.E. This current between Biquette and the north coast is generally very strong to the N.E., without any regular change. In the summer and autumn, as well as in spring-tides, this current slacks, and, near Biquette, runs to the westward, during flood; but, until the upland waters have all run down, and the great rivers have discharged the freshes caused by the thawing of the snows in the spring of the year, this current always runs downward.

From Bic to Green Island, on the southern side, the stream of flood is nowhere perceptible at a mile and half from the islands. The ebb, or rather current, comes strongly from the N.W., out of the River Saguenay, and through the channel to the northward of Red Island, and joining the eddy-flood, before explained, increases the constantly downward course of the stream. Here it always runs in a S.E. direction, 2 miles an hour, with a westerly wind: but only so to the southward and eastward of Red Island. Between Red Island and Green Island, the ebb runs from 4 to 6½ knots.

In crossing over to the north shore, this easterly current will be found to diminish; for, on the north side, the flood is pretty regular, and the ebb much weaker. Eastward of the Razade Rocks, and near Bic, the current assumes a N.E. direction, and sets strongly between Bic and Biquette. To the southward of Bic, spring-floods run at the rate of a knot and a half; neaps are not perceptible. Ships that come to the southward of Bic, with a scant wind from the northward, must steer W. by N., to check the S.E. current, until they come into 18 fathoms of water, or up to Basque, whence they proceed for Green Island.

The first of the flood, spring-tides, sets from the N.E. along the north side of Green Island, and strongly towards the west end of it; then S.S.W. over the reef toward Cacona. In the middle of the channel no flood is perceptible. At two miles to the southward of Red Island it sets strongly to the N.W. and the ebb contrary. During spring ebbs, the meeting of the N.E. and S.E. tides, near the middle of Green Island, causes very strong ripplings; and, to the eastward of Green Island, the S.E. ebb comes strongly about the east end of Red Island; here meeting, the N.E. tide causes a high rippling, much like broken water in strong easterly winds; but in neap-tides the floods are very weak, and in the spring of the year there are none. This renders the part of the river now under notice more tedious in its navigation than any other, unless with a free wind.

From the west end of Green Island a regular stream of flood and ebb commences, which runs five hours upward and seven downward. At the Brandy Pots it flows tide and quarter-tide; and, above the Percée Rocks, on the south shore, it sets regularly up and down, N.E. by E. and S.W. by W.

From the Brandy Pots, the stream of flood sets toward Hare Island; and to the west and north-west with great strength, through the passage between the island and bank. Above Hare Island, the flood sets regularly up the river; the ebb contrariwise. From the Pilgrims up to Cape Diable the flood is very weak, but it thence increases up to the buoys of the Traverse, where it runs at the rate of 6 knots. The first of the flood sets towards the English Bank and Hare Island Shoal, when abreast of the greater island of Kamourasca, and the ebb contrary. In La Prairie Bay, on the north side of the Isle aux Coudres, the time of high water is 4h. 25m., and here it flows six hours; the ebb stream continues an hour and a quarter after low water, and the flood three-quarters of an hour after high water.

The tides in the North Channel being half an hour earlier than in the Southern channels, the first of the flood sets strongly on the St. Roque and St. Anne's Banks; and the first of the ebb sets strongly across the shoals in the middle of the river. In the Traverse, spring-tides rise 18, and neaps 11 feet.

At the South Traverse, on the full and change, the tide on-shore flows at half-past four, but it continues to run to the westward until six o'clock, when regular in the channel. With westerly winds there is a deviation, but it is certain that the tide on shore rises 3 feet before the stream bends to the westward: and this allowance must always be made in every part of the river. In the Traverse, the first of the flood sets from N.N.E.; at the buoys, at a quarter flood, it takes a S.W. direction, and when the shoals are covered at half-flood, at the Seal Reefs, it sets until high water S.W. by W. The ebb in a contrary direction runs with great strength; frequently in the spring of the year at the rate of 6 or 7 knots.

Between the Piliers, or Pillars, it is high water at 5h. The ebb here runs 6 hours and 50 minutes; the flood 5 hours and 25 minutes. Both streams continue to run an hour after high and low water by the shore. From Crane Island the flood sets fair up the river, but the first of the ebb off L'Islet sets to the northward for half an hour, then fair down the river, and at the rate of not more than $3\frac{1}{2}$ knots in spring-tide.

At the Isle aux Reaux, or Rat Isle, below Orleans Island, it is high water at 5h. 32m. It ebbs by the shore 7 hours, and flows 5 and a half; the streams run an hour later. Off the S.W. end of Madame Island, it is high water at 5h. 40m.; springs rise 17, and neaps 13 feet. At Quebec, the time of high water is 6h. 37m. Here it ebbs by the shore seven hours and forty minutes, and flows four hours and forty-five minutes. Both streams run an hour after high and low water by the shore. Springs rise 18, and neaps 13 feet.

DIRECTIONS FOR SAILING UP THE RIVER ST. LAWRENCE FROM ANTICOSTI TO QUEBEC.

THE current from the river sets continually down to the south-eastward between the S.W. point of Anticosti and the coast of the district of Gaspé; but in the spring of the year it is strongest, and is caused, as is supposed, by the vast quantity of snow which thaws about this time. In summer it may be averaged at about the general rate of 2 miles an hour; but in spring, its rate, though it has amounted to 3½ miles an hour, varies according to the quantity of ice and snow that has accumulated. It has been said that there is a difference of 2 or 3 feet in the level of the river between the months of May and August, which has been supposed to arise from the quantity of ice and snow melted in the spring.

Those advancing towards the river, in the fairway between the S.W. point of Anticosti and Cape Rosier, with the wind from the North or N. by E., if ignorant of the current, may think that they are making a reach up, when really approaching the south shore. This is to be guarded against, particularly during a long night, or in dark and thick weather. It is always best to tack in time, and get out of the strength of the current, which will be found to diminish towards the north coast.

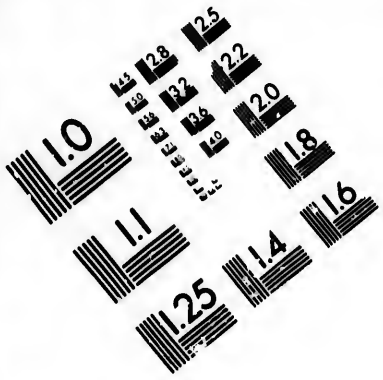
If you are far enough to the westward to weather Anticosti, when coming up with contrary winds, you must stand to the northward and keep within 3 or 4 leagues of the land up to the extremity of the Cape de Monts. The land is all bold, and the tide along it favourable. After getting up to Trinity Cove, or the coast to the N.E. of the cape, the flood will be found setting along the north shore.

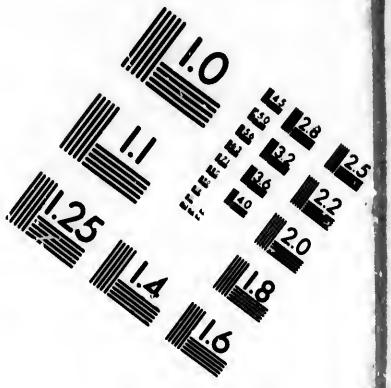
When between the S.W. and west points of Anticosti, both the currents and swell set in shore; and as the bottom is bad, the anchors will not hold; therefore the greatest caution is necessary, on the first appearance of a decrease of wind, to endeavour to stand off the land; or in the event of a calm, you might be set on shore, by the current, near the St. Mary's cliffs, as a heavy swell sets in frequently some hours before there is any wind.

When off the west end of Anticosti, with a fair wind, steer well to the northward, so as to keep out of the strength of the current, steering about W.N.W. or towards English Point: when you have run better than half of the distance, you must steer more southerly toward Point de Monts, and endeavour to make the light, which is situated not on the extreme point, but 1¼ mile N.E. of it; and there are rocks ½ a mile from the point. In thick weather this is a most dangerous part of the navigation; for when the wind is fair it is generally thick; and the greatest caution is necessary when approaching this point; the ship should be put under snug canvas, and the deep-sea lead be kept going; for if you are to the northward of the point, soundings will be obtained 5 or 6 miles from the land, in 40 to 50 fathoms. The vicinity of Cape Chatte has long been the dread of mariners navigating this river, from the number of wrecks, and still more numerous hair-breadth escapes that have occurred near it; the errors in the variation in the old charts, the current and local deviation, all tending to draw vessels upon the south shore.

In clear weather you may run along the south shore; from off Cape Chatte, a W. ¼ S. course, 11 or 12 leagues, will bring you abreast of Matan, the paps of which, when on a S.W. bearing, will appear as two hills standing somewhat inland; Mount Camille will also be visible, bearing W.S.W., distant 14 or 15 leagues, in the shape of a circular island, and appears to the northward of all the southern land. From off Matan to abreast of Mount Camille, steer W. by S., according to the wind. Continuing that course, you will pass Little and Great Metis; and continuing on W. by S., 5 leagues from Great Metis, you will arrive at Father Point, the principal residence of the pilots, and from which Mount Camille bears S.E. ¼ E.

Great Metis is 2 leagues west from Little Metis, and is also only fit for small vessels, which may find shelter and anchorage with S.W. winds, but as the place nearly dries, it is of little use to shipping. Little Metis may be distinguished from Great Metis by a round bluff rock, lying S.E. from the north reef, distant 1½ mile, and a small sugar-loaf hill to the eastward of the rock. Great Metis has a large rock in the middle of the cove; Little Metis has none; but you must be within 2 or





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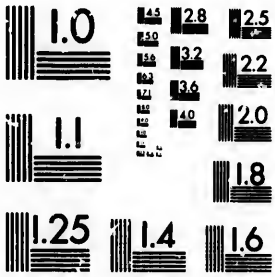

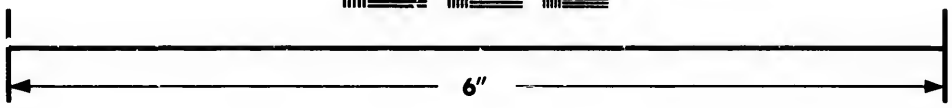

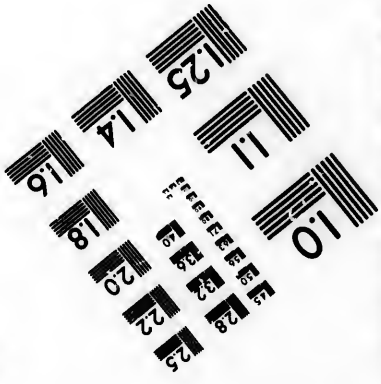

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3 leagues of the shore to distinguish these coves, for the points of land by which they are formed are very low. The bank of soundings extends 4 or 5 miles off from these coves; but to the eastward of Matan you will have 60 fathoms only 3 miles off the shore.

When beating up, it requires a tolerably good sailing vessel, and a flood-tide, to beat past Point de Monts against a wind right out; but short boards round the point, and along the north shore, up to Cape St. Nicholas, will most readily succeed. It is not, however, advisable to keep this shore close aboard farther to the westward, lest the wind should fall to a calm; for there is a strong indraught towards the mouth of the Manicouagon River during the flood-tide. If an easterly wind should chance to spring up, after the vessel has been drifted near the mouth of English Bay, it might be difficult to beat out, or weather the eastern side of the Manicouagon Shoals.

A vessel standing over to the southward from Point de Monts, with a west wind on the starboard tack, will be carried over to the south coast at a rapid rate, having the current on the weather quarter; during her board tack she will be retarded, the current then being directly opposite to her course. When sailing at the rate of 4 knots, it will usually require only about half the time to go from Point de Monts over to the south shore, that it will take to return from the latter to the former. This is a most important circumstance, which it is necessary to guard against when beating up during dark nights, and especially in foggy weather.

When running up, during foggy weather, when the land cannot be seen, the object should always be to strike soundings on the bank along the south coast, about Metis, or Father Point at farthest; and then following it as a guide to the westward. Father Point is low, covered with houses, has a white lighthouse upon it (page 71), and is the regular rendezvous of the pilots. With the lighthouse bearing South, by compass, distant 5 miles, the depth is 30 fathoms, soft clay; but you may haul inshore to 10 fathoms, in foggy weather; and by bringing to with your head off, and firing a gun or two, you will get a pilot off.

The distance from Cape Chatte to the west part of Father Point is about 24 leagues; and thence to the anchoring place at Bic Island, is 13 miles; make an allowance for the current, and any ship may run it with safety.

While advancing from the eastward toward Father Point, and being off Little Metis, the high land to the southward of Cape Arignole may be seen before the cape itself or Isle Bic comes in sight. From off Mount Camille, in clear weather, Bic may be clearly seen. To avoid mistaking Barnaby Isle for that of Bic, observe that, in thick weather, a ship cannot approach the land, near Father Point, without gradually shoaling the water; consequently if, while keeping the lead going, you come into 9 fathoms, and make an island suddenly, it must be Barnaby; or, if falling in with an island on any bearing to the westward of W.S.W., one cast of the lead will be sufficient to ascertain which it is; for, with Barnaby from W.S.W. to West you will have from 7 to 5 fathoms only; but with Bic on the same bearings you will have from 15 to 12 fathoms. But the lighthouses on Father Point and Biquette will remove the possibility of this mistake.

If with the lead kept going, and no soundings be found, you suddenly fall in with an island to the southward, it must be Biquette. With this island, S.W., half a mile, there are 16 fathoms of water. At 2 miles eastward from it are 10 fathoms, and a ship advancing into this depth, from the deeper water, may either haul off to the northward and wait for clear weather, or proceed by sounding around the reef running from the east end of Bic; steer thence W.S.W. 2 miles, and come to an anchor, within the island, in 12 or 11 fathoms. At 4 miles north of Biquette are 50 fathoms of water.

With an easterly wind, if requisite to anchor on the south side of Bic, to proceed from windward, run boldly to the southward, and look out for the reef extending from the east end of the island; the latter may be seen, being always above water. Give the reef a berth of a quarter of a mile, and run along, in mid channel, until Cape Arignole bears S.S.E., the body of the Island then bearing N.N.W. In 10 or 11 fathoms is a large ship's berth, the ground clear and good. Small vessels may run up until the island bears N.E. in 9 fathoms, at about a quarter of a mile from the island, but here the ground is not so clear as in the deeper water. Fresh water is obtainable in the cove just to the westward of the east end of the island.

If, during a westerly wind, a ship should be to the windward of the island, and it be required to bear up, in order to anchor, stand to the southward, into 11 fathoms:

then run down and anchor, as above directed; but particularly noticing that, with little wind, 10 fathoms is the proper depth of the fairway, and that the last quarter-flood, and all the ebb, sets strongly between Biquette and Bic.

Should you, with the wind easterly, be too far to the westward to fetch round the east end of Bic, in order to gain the anchorage give Biquette a berth of half a mile, then run up until the west end of Bic bears S.E., when Cape Arignole will be open of it. The latter mark leads to the westward of a reef that covers at high water, and bears west 1¼ mile from Biquette, while another reef always visible, lies between the former and Biquette. By hauling round to the southward, with Cape Arignole open, you will pass athwart the opening between Bic and Biquette, in from 16, to 12, 10, and 9 fathoms; the water thence shoalens into 6 fathoms, on the spit of mud and sand lying S.W. by W. from Bic, 1 mile. After crossing this spit, you will deepen into 9 and 10 fathoms, when the passage will be open, and you may come to an anchor.

The N.W. ledge of Bic, the west end of that isle, and Cape Arignole, are nearly in a line when bearing S.E. When beating into Bic from the westward, while standing to the southward, do not shut in Mount Camille with Cape Arignole, or, in standing to the northward, do not shut Mount Camille with the Isle Bic.

In foggy weather it is not recommended to run inside of Bic without a pilot, unless you are very well acquainted; and this passage must at all times be run for with great caution.

Bank of Soundings.—In the offing, between Barnaby and Bic, are regular soundings, decreasing from 35 to 30 fathoms, generally of clean ground. Ships may, therefore, anchor in any depth, but no nearer than a mile and a half, with Bic bearing from W.S.W. to S.W., as otherwise the channel on the south of that island will not be open; and, with a sudden shift of wind, you may not be able to quit the island.

At N.W. from the eastern extremity of the S.E. reef of Bic, and just to the southward of the stream of Biquette, is the N.E. reef, a dangerous ledge, seen at low water, spring-tides only. To avoid it, give Bic a berth of 1½ mile. Westward of Bic the edge of the bank of soundings trends to the south-westward up to Basque Isle, and ships may therefore stand safely to the southward by the lead, 12 fathoms being the fairway.

Isle Bic to Green Island.—From the Isle Bic, Green Island bears S.W. by W. ¾ W. 9½ leagues: and the course will therefore be from W.S.W. to S.W. according to the distance northward from Bic, &c. In this course and distance, you pass the Alcide Rock, the Razades, Basque, and Apple Islands. From the Rocks of Apple Island to the eastern reef of Green Island, the bearing and distance are W. by S. 2 miles. This reef extends nearly a mile from the trees on the east end of Green Island, and is always uncovered. The small channel on the south side of Green Island is nearly dry at low water.

The edge of the bank is steep to the northward of the Razades, &c.; but from 35 fathoms, inward, there are gradual soundings. Between Bic and Green Island there is anchorage all the way in 14 fathoms; and for small vessels, in fine weather, in 9 fathoms. If up to the east end of Green Island, and the tide be done, you may anchor in 10 fathoms, off the reef, and in the stream of the ledge extending N.E. by N. from the lighthouse point, at the distance of a mile from the extremity of that shoal.

Between Bic and Basque the ground is all clean; but thence to Green Island it is foul. A small vessel may find shelter under the east end of Basque, in 2½ fathoms at low water, giving the east end of the reef extending from that island a berth of a quarter of a mile. The anchorage is with the island bearing W. by S.

The lighthouse and reefs about Green Island have been already described on page 75. The lighthouse bearing S.W. by W. leads safely up to Green Island. The high land to the southward of Cape Arignole kept open to the northward of Basque Island, leads clear of the lighthouse ledge. With the lighthouse bearing S.W. by S., this ledge will be exactly between the ship and lighthouse.

Between the lighthouse and the west end of Green Island, in fine weather, you may stop a tide in 20 or 25 fathoms, close to the north side of the island; but, if the wind be fresh, the ground will be found to be bad for holding, and too near the shore. During N.E. winds, small vessels may anchor between the S.W. reef and Cacona, in 4 fathoms; but it will be better to bear up for the Brandy Pots, lest they be caught by adverse weather, &c.

Should you, therefore, have passed the lighthouse on Green Island, and no pilot be

obtained, the weather clear and the wind fair, steer boldly on S.W. ½ W. or S.W. by W. 3 leagues, you will then have White Island W. by S., and Hare Island with the Brandy Pots S.W. by W., or nearly ahead. Give the Brandy Pots a berth of three-quarters of a mile and run on a mile or more above them, then anchor in from 7 to 14 fathoms; or should the wind shift to the westward and your vessel be up to White Island, the tide being spent, stand to the southward into 9 fathoms, or towards White Island into 6 or 7, then anchor; the ground is good for holding.

Red Island bears from the lighthouse of Green Island N.W. by W. ½ W. nearly 5½ miles. The eastern extremity of its extensive reef bears from the same lighthouse nearly N.W. by N., and is cleared by the lighthouse and beacon on Green Island in one, bearing S.S.E. ¼ E. When coming up in the night, that light should not, therefore, be brought to the eastward of S. by E. until you are certainly within 5 miles of it. If, with the light bearing S. by E., you cannot make free to enter the narrows, wait for daylight; and should the wind be scant from N.W. you may then borrow on the south side of Red Island, but so as to have White Island bearing S.W. ¾ W. On drawing to the westward, you may approach the Shoal of White Island by the lead, remembering that the ebb-tide sets strongly down between White Island and Red Island, and the flood in the contrary direction. A vessel may anchor, in fine weather, on the south side of Red Island Reef, in 12 fathoms, at the distance of about three-quarters of a mile. The tide hereabout, as already shown, sets in all directions. The lighthouse of Red Island has already been mentioned on page 76.

The soundings between Green Island and Red Island are very irregular. At a mile from each are nearly 30 fathoms of water. The water, during ebb-tide, with an easterly wind, appears broken, but there is no danger. The mark to sail through between Green and Red Islands is the Brandy Pots bearing S.W. ¾ W.

The North Coast.—The Point de Mille Vaches bears from Biquette N.W. by W. 4½ leagues. The extensive shoal, which surrounds this point, commences off the river of Port Neuf, on the east, and has its southern extremity at 1½ mile from shore, and very steep-to; the greater part of the shoal is dry at low water. Above the point the land forms the Bay of Mille Vaches, which is shoal, and full of rocks. At 11 miles S.W. by W. from Point Mille Vaches, there are two islets, named the Esquamine Isles. In the Bay, at 4 miles west from the point, is a small river, named Sault de Mouton, having a fall of 80 feet, near the mouth of it, which may be always seen when passing. Between the Esquamine Isles and Saguenay River, a distance of 7½ leagues, S.W. by W., are three small rocky inlets, named Bondesir and Les Bergeronnes, which afford shelter to fishing boats.

In proceeding for the Saguenay River, should the weather be thick, it would be advisable to drop anchor at the Brandy Pots, until the weather becomes favourable, when the entrance can be easily effected with a leading wind. The leading marks are good, and the entrance a mile wide between the shoals. The Bull (Laboule) is a round mountain on the north side of the Saguenay, about 4 miles up, and by keeping the Bull open from the points, there is no danger in running in; and when abreast of the port or houses at Tadousac, they may run up on whatever side they think they have most advantage, but with ebb-tide there is less current on the north-east side of the river.

Other directions have been given in the description of the river and its entrance on p. 69, and it may be added here that there are good anchorages at the Anse St. Etienne, 10 miles above Tadousac, at St. Louis Island, 15 miles from Tadousac, at the Anse St. Jean, 22 miles, and at the Baie de l'Eternité, 28 miles above Tadousac, at all of which vessels might lie well to load; in other parts of the river the depth is far too great to anchor.

Ships working upon the north side, between the Esquamine Isles and Red Island, should keep within 2 leagues of the north land: the shore is clear and bold, and the flood pretty regular. But should a ship, to the northward of Red Island, be caught by a sudden shift of easterly wind, so that she cannot fetch round the east end of Red Island Reef, she may safely bear up and run to the westward, giving Red, White, and Hare Islands, a berth of 2 miles in passing. At 3 leagues above Hare Island, she may haul to the southward, and enter the south channel toward Kamourasca, and thence proceed as hereafter directed.

Green Island to the Brandy Pots.—The Percée Rocks, Barrett Ledge, White Island, and the Brandy Pots, have been described on pages 75-77. From Green Island

to the Brandy Pots, the course and distance are from S.W. ½ W. to S.W. by W. 4 leagues. The mark to clear Barrett Ledge, is the southernmost mountain of Kamourasca in a line with the saddle of the Great Pilgrim, or an islet lying off the N.E. side of Green Island, touching the high land of Cape Arignole: either of these marks will clear the ledge, but it is not recommended to go to the northward of it unless you are visiting the anchorage at the Brandy Pots.

In advancing toward the White Island Reef, you may trust to the lead, but 7 fathoms is near enough to tack or anchor in, and this depth is in the fairway to the Brandy Pots. The Brandy Pots are steep on the south side, 10 fathoms being near to them.

There is good anchorage to the eastward of the Brandy Pots, in from 9 to 7 fathoms, and good anchorage above them, in from 9 to 14 fathoms. This is the best roadstead of any part of the river, during easterly winds, excepting that of Crane Island, and is the usual rendezvous for vessels bound down the St. Lawrence, and waiting for a wind.

The best passage is to the southward of the Barrett Ledge and Middle Ground, and between them and the Pilgrim Shoal. The mark is the lighthouse on Green Island just shutting in with the south-west point of the island, and bearing N.E. ¾ E., but the lead must be kept going so as not to approach the Pilgrim Shoal too closely. In mid-channel are soundings of 9 to 10 fathoms.

The Brandy Pots to the South Traverse and Goose Island.—The flat on the south side of Hare Island above the Brandy Pots is bold-to, there being 7 fathoms close to it nearly up to the west end, and the whole of this side of the island is bordered by rocks. When leaving the Brandy Pots for the south channel the passage is across the 3½-fathom spit extending between the Middle Ground and the south-east end of the Hare Island Bank; but should your vessel draw more water, it is better to run round to the eastward of Barrett Ledge, which is marked by a buoy, and so enter the channel. Having entered the channel bring the north side of Burnt Island just open to the northward of Grand Island, bearing S.W. ⅓ W., and it will lead through between the Pilgrims and Hare Island Reef; keep the lead going, as the shores on either side are steep-to. When past the red buoy on the west end of Hare Island Bank, the river is all clear to the westward, so that you may stand from the south bank over to the north shore until you are up to Cape Goose.

In standing to the southward from Hare Island, above the Brandy Pots, you will find 16 to 18 fathoms of water. On the north side of the Middle Bank, 4 to 8 fathoms; but there are 8 and 9 fathoms on the south side of this bank, with gradual soundings to the south shore. Five fathoms is a good depth to tack in.

At night, or in hazy weather, after crossing the Middle Bank from the Brandy Pots, you should take either the north or south side of the channel as a guide for running up by the lead, in about 7 fathoms; until you are up as high as the middle of the Long Pilgrim you may take either side; the south side of the Hare Island Bank should then be followed in the above depth, as the western part of the Pilgrims, Banc de St. André, and Kamourasca Islands, are all so steep-to as to give no warning by the lead. When past Kamourasca, keep along the edge of the south bank, in 7 or 9 fathoms, up to the black buoy of St. Ann's; if in a large ship, you may keep off in 10 fathoms.

The direct course from the Pilgrims to the buoy on the St. Ann's Shoal is about S.W. by W. ½ W., and the distance 7½ leagues. The South Traverse and coast between have been fully described on page 81, &c. The bank between the Pilgrims and Kamourasca Isles is steep-to. The mark for tacking here is not to shut in the south-west land with the great Island of Kamourasca: in standing to the northward, you will gain the depth of 20 fathoms.

Kamourasca.—From the west end of Crow Island, the third of the Kamourasca Isles, the church bears S.E. nearly a mile. Between is a place where ships may safely be run on shore; to run in, bring the church to bear E.S.E., or some distance to the westward of Crow Island, and run for it. In passing in, you will carry 14 feet in common spring-tides, and 10 feet with neaps. The bottom is of soft mud.

Cape Diable bears from Crow Island S.W. ½ W. about 3 miles, and a reef extends from the cape as already explained, the easternmost part of which is not more than a mile and a half from Crow Island. Ships from the westward, therefore, in order to get in, should run down along the reef in 6 fathoms, and haul in for the church, as above.

With easterly winds, the large cove on the S.E. of Cape Diable is a fine place for a vessel to run into, should she have lost her anchors. To enter, bring Kamourasca Church to bear E.S.E. as before. Having arrived within the reefs, run up to the westward, leaving an islet that lies above the church on the left side; then put the ship on shore in the S.W. part of the cove, and she will be safe. Should the wind be westerly, put her on shore a little to the eastward of the church.

South Traverse.—From Cape Diable to the South Traverse, the course, if at 3 miles from the cape, will be S.W. by W. $\frac{3}{4}$ W., 5 leagues, which will lead you to the lightvessel at the entrance of the Traverse. The banks on either side of this channel are buoyed. The course through is S.W. $\frac{1}{2}$ S., 4 miles, along the edge of the St. Roque Shoal up to the third black buoy, and thence S.W. by S. to the chequered buoy on the Patch. The passage is then to the southward of the Stone Pillar with its revolving light, from whence you steer S.W. by W. past Goose Island Reef towards Crane Island. In these courses allowance must be made for the tide, which, whether ebb or flood, runs strongly, and you should tack on the first shoal cast, as the banks are steep.

If running from off Cape Diable for the Traverse, during the night or in a fog, strike the bank off that cape in 7 or 8 fathoms, and steer about W.S.W. By keeping that depth, it will lead to the lightvessel. On passing the point of St. Roque Shoal, the water will suddenly be found to deepen, whence you must haul to the southward, keeping the south side on board, and proceed as above.

If entering the Traverse with little wind, be careful to allow for the first of the flood, as it sets strongly toward the point of St. Roque Shoal. On going through, if more than half-flood, allow for a set to S.W. by W., and be sure always to keep the south bank on board. Above the Piliers, or Pillars, the tide sets fair up the river.

In beating into and through this passage, be careful and tack from side to side on the first shoal-cast of the lead; but more particularly so to the northward, on the edge of the Middle Ground. Ten fathoms is near enough to the bank; and it is to be remembered, that the ship will always go farther over toward the Middle Bank than to the point of St. Roque Shoal.

Anchorage.—Between the Brandy Pots and Traverse, there is anchorage all along the English Bank, and upon the edge of the flat on the south side, between the Pilgrims and the greater Kamourasca Isle, in 9 fathoms: under the Pilgrims, in 3 fathoms; off Cape Diable, in 10 fathoms; and thence, along the flat, up to the buoys.

Should the flood be done, when a ship is in the narrows, or between the buoys, or if any occurrence render it necessary to anchor, do not bring-to in the channel, but on either side, as most convenient, and come-to in 7 fathoms; the tides will be found much easier after half-ebb. In the deep water the tides run with considerable strength; therefore if you should be obliged to come-to, do so in 7 fathoms, with a good scope of cable before the tide becomes strong; for, if the anchor once starts, you may have to cut from it, as it seldom takes hold again, the ground being foul and unfit for holding.

Near the Pillars the tides are much easier than below, as at and above them they set at a rate of not more than $3\frac{1}{2}$ miles an hour. Ships bound down, with easterly winds, may anchor at two miles to the north-eastward of the South Pillar, in 7 fathoms; or, to the southward of it, in the same depth, with good ground.

From abreast of the Stone Pillar, or of the Avignon Rock, the direct course and distance to Crane Island are S.W. $\frac{1}{2}$ W. 4 leagues. On this course you pass Goose Island, and arrive at the Beaujeu Bank, the channel to the south of which is that generally used; the depth in it is irregular, varying from 5 to 3 fathoms; and there are two rocky patches of $2\frac{1}{2}$ fathoms in the way, and difficult to avoid. The marks for passing the southern edge of the Beaujeu Bank, along the eastern half of its length, are, the Stone Pillar, its own breadth open to the southward of Goose Island Reef; and for the western part of the bank, which turns up slightly to the northward towards Crane Island, Point St. Vallier open $\frac{1}{4}$ of a point south of the south side of Crane Island; but must hence take a circuitous route, in order to avoid this and other shoals. The south side of the channel is a muddy flat, of 3 and 2 fathoms, with regular soundings toward it. There is hence good anchorage all the way up to Crane Island. Stand no nearer toward Goose Island Reef than 10 fathoms; but above it you may stand toward the island to 7 fathoms.

When up to the body of Crane Island, you may approach safely, as it is bold and clear, with 7 fathoms close to the rocks.

From off the Pillars to Crane Island there is, all the way, good and clean ground. There is, also, a good road off the body of Crane Island, in 8 fathoms. The best road in the river, during easterly winds, is at a mile to the westward of Crane Island; and ships bound downward, if at the Pillars, and caught by strong easterly winds, had better run back to this place, than ride below, and risk the loss of anchors.

CRANE ISLAND TO POINT ST. VALLIER.—The direct course and distance from Crane Island to Point St. Vallier are from W. by S. to W.S.W., 4 leagues. Between are the mud bank of St. Thomas, the Wye Rocks, the Belle Chasse Island, and the bank of Grosse Island. When St. Thomas's Church bears S.E. $\frac{1}{2}$ E. you will be abreast the point of the bank named Margaret's Tail, having a red buoy, and may thence steer directly up, W.S.W. The mark for the southern edge of Margaret's Tail Bank is, the south side of Haystack Island and Crane Island Church in one, bearing E.N.E.

To avoid the Wye Rocks, never stand to the southward of 6 fathoms in the night: and by day, observe that the long mark to keep clear of them is Belle Chasse Island and Point St. Vallier, touching, bearing W.S.W. They are out of the way of vessels, with a fair wind, and the cross mark for them is the Seminaire on the north shore in one with the east point of Reaux Island, and Crow Island just open to the westward of Middle Island.

To the west of Margaret's Tail is a narrow rocky shoal named Grosse Patch, with 7 feet least water; between this shoal and Margaret's Tail is a channel 270 fathoms wide, and 5 fathoms deep, leading to the Quarantine Establishment on the southern side of Grosse Island. For the guidance of the numerous vessels which stop there, a red buoy has been placed on the S.W. end of Margaret's Tail, as before mentioned, and also a white buoy on the N.E. of Grosse Patch; but in the absence of the buoys, the east points of Grosse Island and the Brothers in one, bearing N. by E., will lead through. There is a passage to the west of Grosse Patch, between it and the Island, but care must be taken to avoid a small rock, with 7 feet least water, lying 180 fathoms off Grosse Island, and on which a chequered buoy has been placed.

When above Margaret Island, stand no farther to the northward than into 6 fathoms. Reaux or Rat Island and Madame are flat to the southward; 7 fathoms will be near enough to both. The south side of the channel, up to Belle Chasse Island, is all bold; 8 fathoms are close to it, with 7, 8, 9, and 5 fathoms, quite across. There is good clean anchoring-ground, and easy tides, all the way.

When up to Belle Chasse Island, stand no nearer to it than 8 fathoms, and to Madame than 6 fathoms. The shoal extending from Madame has already been noticed.

The mark for clearing the southern side of Madame Bank, as well as the Grosse Island Tail and Patch, is, Race Island kept just open to the southward of Margaret Island. The mark for the S.W. extreme, which is the point of the entrance of the North Traverse, is, the north side of Reaux Island just open to the northward of Madame Island, bearing N.E. $\frac{3}{4}$ E., and St. Vallier Church bearing S. $\frac{1}{4}$ E. The cross mark for clearing it to the S.W. is, Berthier Church and the west end of Belle Chasse Island in one.

The North Channel and Traverse and the Middle Traverse are but seldom used, and the description of them will be found on pages 79 and 80.

ST. VALLIER TO QUEBEC.—From the Point of St. Vallier to that of St. Lawrence in Orleans, the course and distance are about W. by S. $\frac{1}{4}$ S. 9$\frac{1}{2}$ miles. Both sides are bold; 10 fathoms in the fairway from Orleans, and 8 fathoms from the south shore. Ships may anchor toward the island, in from 16 to 10 fathoms.

The Shoal off Beaumont is steep-to. Make short boards until you are above Point St. Lawrence, when you will be above it, and may safely stand to the southward into 10 fathoms.

From Point St. Lawrence to Point Levi, the course and distance are W. by N. 2 leagues. At 1$\frac{1}{2}$ mile westward from St. Lawrence's Church is St. Patrick's Hole. Here, in about 10 fathoms, is the fairway to tack from. The depth in the middle is 19 fathoms.

From off Point Levi to Quebec, the course is W.S.W., and the distance about 2 miles. The Shoals of Beauport, on the north side, may be easily avoided; in

standing toward them advance no nearer than in 10 fathoms, as they are steep-to, and are, in some parts, studded with rocks.

Ships arriving at Quebec, with flood tide and an easterly wind, should take in their canvas in time and have cable ready, as the ground in the basin is not very good for holding. The water is deep, and the tides strong, particularly spring-tides. If obliged to come-to in the middle, there will be found from 16 to 20 fathoms abreast of the town; but near the wharves, or at 2 cables' lengths from them, is a depth of 11 fathoms: and here vessels are easily brought up: but in the offing 16 fathoms of cable will be required. On the Point Levy side is a depth of nearly 30 fathoms, and the tides are stronger here than near the wharves. With a wind heavy from the eastward, the best riding will be above the wharves, off the cove named Diamond Harbour, in the depth of 10 fathoms.

The Ballast Ground, or place appointed by law for heaving out the ballast in, is to the westward of two beacons fixed on the south shore, above Quebec. These beacons stand on the brow of a hill, above a cove named Charles Cove, and when in a line bear N.W. and S.E. of each other.

RATES OF PILOTAGE.

THE following were the rates of pilotage a few years since, and are added, as we believe they still remain the same:—

From BIC *to* QUEBEC. *Per Foot.*	£	*s.*	*d.*
From the 2nd to the 30th of April, inclusive	1	0	6
1st of May to the 10th of November, inclusive	0	18	0
11th to the 19th of November, inclusive	1	3	0
20th November to the 1st of March, inclusive	1	8	0
From QUEBEC *to* BIC.			
From the 2nd to the 30th of April, inclusive	0	18	3
1st of May to the 10th of November, inclusive	0	15	9
11th to the 19th of November, inclusive	1	0	9
20th November to the 1st of March, inclusive	1	5	9

Rates of pilot-water and poundage on pilot-money are payable at the Naval Office, by masters and commanders of vessels.

For every foot of water for which masters and commanders of vessels are bound to pay their pilots from Bic to Quebec, and from Quebec to Bic, 2*s.* 6*d.* currency, per foot.

For vessels going to Three Rivers or Montreal,

Of 100 to 150 tons, inclusive, £2 currency.
Of 151 to 200 tons, inclusive, £3 „
Of 201 to 250 tons, inclusive, £4 „
Of 250 tons and upwards £5 „

On settling with pilots, masters or commanders of vessels, or the consignees of such vessels, are to deduct 1*s.* in the pound for the amount of the sums to be paid for pilotage, which will be exacted by the Naval Officer at clearing out, the same being funded by law, under the direction of the Trinity House, for the relief of decayed pilots, their widows and children.

REGULATIONS *for the pilotage above* BIC *to* QUEBEC.

At or above the anchorage of the Brandy Pots—
Two-thirds of the present rate for a full pilotage.
At or above the Point of St. Roque—
One-third of ditto.
For above the Point aux Pins, on the Isle aux Grues (Crane Island), and below Patrick's Hole—
One-fourth of ditto.
And at and above Patrick's Hole, £1 3*s.* 4*d.*

For shifting a vessel from one wharf to another, between Bréhant's Wharf and Point à Carcis, or to the stream from or to any of the above wharves, 11*s.* 8*d.*

For shifting a vessel from the stream or from either of the above wharves, to St. Patrick's Hole, or to the Basin of Montmorency, or to the Ballast Ground, the Basin of the Chaudière, the Wolfe's Cove, and as far as the River Cap Rouge, £1 3*s.* 4*d.*

RATES *above the* HARBOUR *of* QUEBEC:—

From Quebec to Port Neuf.		*To Quebec from Port Neuf.*
	For vessels of registered measurement,	
£4 currency.	not exceeding 200 tons	£2 10*s.* currency.
£5 „	If above 200 and not exceeding 250 tons	£3 10*s.* „
£6 „	If above 250 tons	£4 0*s.* „
To Three Rivers, or above Port Neuf.		**From Three Rivers, and above Port Neuf.**
£6 currency.	For vessels not exceeding 200 tons	£4 0*s.* currency.
£7 „	If above 200 and not exceeding 250 tons	£4 10*s.* „
£8 „	If above 250 tons	£5 10*s.* „
To Montreal, and above Three Rivers.		**From Montreal, and above Three Rivers.**
£11 currency.	For vessels not exceeding 200 tons	£7 10*s.* currency.
£13 „	If above 200 and not exceeding 250 tons	£8 15*s.* „
£16 „	If above 250 tons	£10 15*s.* „

Pilots are at liberty to leave vessels forty-eight hours after they arrive at the place of their destination.

APPENDIX.

THE HARBOURS OF HALIFAX AND ST. JOHN, ETC.

A DESCRIPTION of the coasts of Nova Scotia and New Brunswick does not properly come within the limits of the present work; but as many shipmasters, bound to the River St. Lawrence, may also visit the harbours of Halifax or St. John's, it has been thought desirable to append instructions for those ports. For more minute accounts of them, as well as for the various harbours of Nova Scotia and New Brunswick, the reader is referred to the Sailing Directions for the coast of North America, from Cape Canso to New York Harbour.

HALIFAX HARBOUR lies about 120 miles westward of Cape Canso, and 113 miles eastward of Cape Sable, and is one of the finest in British America.* It is easy of approach and accessible at all seasons, and is large enough to accommodate almost any number of vessels in perfect security. Its direction is nearly North and South, and its length about 14 miles. The channel up to the town is nowhere less than $\frac{1}{2}$ a mile broad, nor under 6 fathoms in depth, except in two places where there are only $4\frac{1}{2}$ fathoms; these are named the Neverfail and Middle Shoals. Its upper part, known by the name of Bedford Basin, is a beautiful sheet of water, containing about 10 square miles of good anchorage. The town of Halifax is the capital of Nova Scotia, and contains above 18,000 inhabitants. High water on the days of full and change at 7h. 49m.; springs rise 6 and neaps $4\frac{1}{2}$ feet.

The land about the Harbour of Halifax, and a little to the southward of it, is in appearance rugged and rocky, and has on it, in several places, scrubby withered wood. Although it seems bold, it is not high, as it is only to be seen from the quarter-deck of a 74-gun ship at 7 leagues distance; excepting, however, the high lands of Le Have and Aspotogon, which have been seen 9 leagues off. When Aspotogon highland, which has a long level appearance, bears North, distant 6 leagues, an E.N.E. $\frac{1}{2}$ E. course will carry you to Sambro' Lighthouse.

The entrance of the harbour is between Chebucto Head and Sambro' Island on the western, and Devil's and Macnab's Islands on the eastern side. *Sambro' Island* is small and rocky, lies 4 miles S.W. of Chebucto Head, and is surrounded by a multitude of rocks and shoals, bearing the general name of Sambro' Ledges, through and among which are deep water passages, but too intricate for a stranger to attempt. To avoid them, give the island a berth of at least 3 miles. Pilots may be obtained from Sambro' Island, and if a vessel fires a gun during a fog, it will be answered therefrom. *Devil's Island* lies close off Hartland Point, is small and rocky, and connected with the main by a flat nearly dry at low tide; in passing give it a berth of $\frac{1}{3}$ of a mile or more. *Macnab's*, or Cornwallis Island, forms the eastern side of the channel into the harbour, and is connected with the eastern shore by a flat of 8 to 12 feet, upon which is situated the little island named Lawler. The passage on this side of the island, named the South-east Passage, is too shallow and confined to be used by any but boats, so that vessels always use the western passage into the harbour. From the south end of the island a shoal extends about $1\frac{1}{4}$ mile to the southward, and upon this flat there is a small island, named

* Longitude of the Dockyard Observatory at Halifax 63° 35′ 14″ W., according to Admiral Bayfield, and 63° 35′ 15″ W., according to Professor Bond, of Cambridge Observatory, U.S., and Lieut. Shortland, R.N., whose observations were made by means of the electric telegraph, and based upon the known position of the latter observatory.

the Thrum Cap. Northward of Macnab's Island is *George Island*, a small island lying nearly in mid-channel opposite the town. Close off it there are 4 to 8 fathoms, and in the channel between it and the town are 8 and 14 fathoms, while to the eastward of it are from 10 to 14 fathoms; both channels being free from danger to within a cable's length of either shore.

LIGHTS.—Sambro' Island has a white octagon-shaped lighthouse upon the middle of it 60 feet high, showing a fixed light at 115 feet above the level of the sea, visible 20 or 21 miles.

On the southern end of Devil's Island there is a building painted brown, with a white belt, from which a light, appearing red towards the sea, is shown at the height of 45 feet above high water, visible about 8 miles. From this island pilots may be obtained.

Near the extremity of Maugher's Beach, a gravel spit extending from the middle of the western side of Macnab's Island, there is a white circular tower having a red roof, from which a fixed light is shown at the height of 58 feet above the sea, visible 10 miles. When Sambro' Light bears W.S.W., this light should not be brought to the westward of North, and it will clear the Portuguese, Rock Head, and Thrum Cap Shoals.

DANGERS.—The rocky promontory of Chebucto Head, south-westward of which, and around Sambro' Island, are numerous rocks and shoals, must always be carefully approached when entering the harbour from the westward. The assistance of local knowledge is absolutely requisite to enable you to sail among these dangers, and therefore a stranger should give Sambro' Island a berth of 3 or 4 miles in passing, and not attempt any of the channels inside them.

Bell Rock.—This is a small rock of 6 feet, lying $\frac{4}{10}$ of a mile from the shore, nearly midway between the entrance to Catch Harbour and Chebucto Head. In a northerly direction, towards the coast, it has a spit of $4\frac{1}{2}$ fathoms, extending from it a short distance, but in other respects it is steep-to, there being 7 and 8 fathoms close to its eastern, and 13 and 24 fathoms close to its western, side. Between it and the shore there are 14 and 8 fathoms, but no ship should attempt to pass inside it, on account of the dangerous rocks, named Duck and Duncan Reefs, which extend from the land and nearly block up the passage. Bell Rock bears from the extremity of Chebucto Head nearly S.S.W. $\frac{1}{4}$ W. one mile, and from White Head, the east point of Catch Harbour, E. $\frac{1}{4}$ N. about $\frac{1}{2}$ a mile. To avoid it on the east side, do not go to the westward of the line of Sandwich Point in one with Chebucto Head, about N. $\frac{1}{2}$ E., as that mark will carry you clear of it, and also to the eastward of the Sisters, and the other ledges in the vicinity of Sambro' Island.

Portuguese Shoal.—This is a small shoal of $4\frac{1}{2}$ or 5 fathoms, the outermost of those lying before the entrance to the harbour. It lies 3 miles S.W. $\frac{1}{2}$ W. from the lighthouse on Devil's Island; 4 miles S. $\frac{1}{2}$ E. from the lighthouse on Maugher's Beach; and $2\frac{1}{2}$ miles N.E. $\frac{1}{4}$ N. from the extremity of Chebucto Head. Close-to it all round are 6 and 7 fathoms. Its western side is marked by a black buoy, lying with George Island open a little westward of the light on Maugher's Beach.

Rock Head.—This shoal lies nearly $\frac{3}{4}$ of a mile to the E.N.E. of the buoy on the Portuguese Shoal. It is about $\frac{1}{4}$ of a mile in extent, and has $3\frac{1}{2}$ to $4\frac{1}{4}$ fathoms upon it, with 6 to 10 fathoms close-to all round. To clear it, as well as the Portuguese Shoal on the east side, bring Sambro' Lighthouse Island open east of White Head, bearing S.W. $\frac{1}{2}$ W. A black buoy with white bell and frame is placed on its south-eastern side.

Lichfield Rock.—This small shoal lies on the western side of the approach to the harbour at rather more than $\frac{3}{4}$ of a mile from the shore, in the direction of S.E. by S. $\frac{1}{2}$ S. from the mouth of Herring Cove. It has upon it $2\frac{1}{2}$ fathoms, and there are 9 to 16 and 17 fathoms at a short distance from it, the deepest water being between it and the coast, where there is as much as 20 fathoms. It is marked by a white beacon buoy, moored on its eastern side.

Neverfail Shoal.—This is a shoal of $4\frac{1}{2}$ fathoms, lying in the middle of the approach to the harbour, at nearly midway between the Lichfield Rock and the Thrum Cap Shoal. It has 5 and 6 fathoms immediately around it, and, we believe, at present is not marked by a buoy. You may sail between it and the Lichfield Rock by bringing the flag-staff of the Citadel open east of Sandwich Point, bearing

N. ¼ W., or between it and Thrum Cap Shoal, by bringing George Island open a little to the westward of Maugher's Beach Lighthouse.

Mars Rock.—This rock lies southward of and under Sandwich Point, the western point of the harbour, at from ¼ to ½ of a mile from the land. On its shoalest part there are 3½ fathoms, and immediately around it are 8 and 10, deepening to 19 and 20 fathoms. Its eastern edge is marked by a white beacon buoy.

Thrum Cap Shoal.—This is a shallow flat of 1½ to 3 fathoms, extending a mile to the S.S.W. from the south end of Macnab's Island, on the eastern side of the harbour. It must be carefully avoided when making the harbour from the eastward, and the red beacon buoy on its edge should always be passed on its south side.

Maugher's Beach.—From the south side of this beach a flat of 2½ to 4½ fathoms extends about ½ a mile, and has on it, near the extremity, a patch of 3¼ fathoms. To clear this flat when running into the harbour, bring the Roman Catholic Chapel, at Dartmouth, in one with the east point of George Island, bearing N. ¼ E., and you will avoid it in 10 or 11 fathoms. There is also a shoal running 1½ cable's length off from the northern side of the beach, and named the Horse Shoe Reef.

The Middle Ground is a small gravelly patch of 4½ fathoms, lying right in the fairway of the channel, with Maugher's Beach Lighthouse bearing S.E. by S. ¼ S., distant ¾ of a mile; close-to all round are 6 and 7 fathoms. It extends East and West a cable's length, and is about 30 fathoms broad; as you fall off to the eastward of it you will have from 7 to 13 fathoms water, muddy bottom, while on the west side there are from 10 to 14 fathoms, coarse and rocky bottom.

Pleasant Shoal extends from Pleasant Point nearly half way over towards the north-west end of Macnab's Island. There are but 3 and 4 feet over it in many parts, but its extremity is marked by a white buoy, which should always be left on the port hand in entering.

Reed's Rock, a small rock having 4 feet over it, lies in-shore, about half way between Point Pleasant and Halifax. The thwart-mark for it is a farmhouse in the wood over a black rock on the shore, bearing W. by S. There are 5 and 7 fathoms around it, and a white beacon buoy is moored off its eastern side.

Ives Knoll has but one foot of water over its centre, and from 9 to 15 feet on other parts; it lies off the north end of Macnab's Island, separated therefrom by a narrow channel 4 and 5 fathoms deep, and on its western side there is a red buoy, moored opposite the white one marking Reed's Rock.

Belleisle Spit extends ¼ of a mile from the shore at the south end of Halifax, opposite the south point of George Island, and has a white beacon buoy on its outer edge. One-fourth of a mile further in, on the same side, is the white beacon buoy on the edge of the Leopard Shoal.

DIRECTIONS.—No vessel ought to attempt the harbour of Halifax without having a local pilot on board. In the event of not being able to get one, the following directions may be serviceable.

In sailing into Halifax Harbour from the westward, you should advance to the eastward so as to pass Sambro' Lighthouse at the distance of a league, taking care not to approach nearer to it on account of the various dangers in its vicinity. When the lighthouse comes to the westward of N.N.W. you may proceed N.E. or N.E. ½ N. about 4½ miles, which will bring you off Chebucto Head. Here you will bring the leading mark on, which is the Citadel Flagstaff, just open of Point Sandwich, N. ¼ W., and, by keeping them thus open, you will pass between the Portuguese black buoy, and the Neverfail and Thrum Cap Shoals on the starboard, and Lichfield white beacon buoy on the port hand, up to the white beacon buoy on the edge of Mars Rock, which must be left also on the port side by opening the flagstaff a little more to the eastward. Sandwich Point, which is bold-to, may now be approached, and passed at the distance of a cable's length, and by keeping Chebucto Head a little open of Sandwich Point, about S. ¾ W., you will continue in the fairway up to George Island, leaving the Middle Ground a little on your eastern side, and the white buoys on Pleasant Shoal and Reed's Rock on your western. Or, when up with Mars Rock buoy, you may haul to the eastward and bring Dartmouth Roman Catholic Chapel in one with the east point of George Island, N. ¼ E., which will lead in between Maugher's Beach or Lighthouse Bank and the Middle Ground, up to abreast the town, passing the red buoy on Ives Knoll on the starboard side, and the white ones on Pleasant Shoal, Reed's Rock, and Belleisle Spit on the port side.

Or, when abreast of Chebucto Head, or when Sambro' light bears W.S.W., the light on Maugher's Beach should never be brought to the westward of North. Keeping the light from North to N. by E. will lead in clear of all the shoals, except the Neverfail, up to abreast Sandwich Point. Those advancing from the westward will see the light on Maugher's Beach, when they are as far up as Chebucto Head; it is then a good mark up to Sandwich Head.

*In sailing into Halifax Harbour from the eastward,** especially with an easterly wind, and intending to pass in between the Rock Head and Thrum Cap Shoals, steer towards Devil's Island, leave it ½ a mile to the northward, and steer West, making due allowance for the influence of the tide. If this course be made good you will pass above a mile northward of the bell buoy on the south end of Rock Head Shoal, and one-third of a mile southward of the red buoy off the south-west end of the Thrum Cap. As soon as George Island appears open westward of Maugher's Lighthouse, haul up and proceed on that line of bearing, and as you near Sandwich Point, open the island gradually more to the westward, till the Roman Catholic Chapel comes in line with the east end of George Island, then proceed as before directed.

In turning to windward, give the upper or inner part of Maugher's Beach a berth of 2 cables' lengths, in order to avoid the Horse-Shoe Reef, that runs from the north part of the beach to the distance of 1½ cable's length. You may stand to the Sandwich Point side to within two ships' lengths, that being bold-to; but stand no farther over to the westward, to avoid Point Pleasant Shoal, than keeping Chebucto Head well in sight without Sandwich Point.

When up with George Island pass it on either side, as most convenient, giving it a berth of 80 or 100 fathoms, and choose your anchorage at pleasure, in from 13 to 6 fathoms, muddy bottom. From George Island into Bedford Basin there is no obstruction to shipping, if a moderate berth be given to the shores.

Capt. Orlebar, R.N., says that "a rock, with 14 feet least water over it, lies 50 fathoms from the end of Lyle's Wharf, and bears from Government House E. 12° S., distant 180 fathoms. It lies within the depth of 5 fathoms, but in passing up the harbour no vessel of size should approach the wharves until well past this bearing from Government House. If York Redoubt be kept open of the wharves this rock will be cleared."

Ships of war usually anchor off the Naval Yard, which may be distinguished at a distance by the masting sheers. Merchant-vessels discharge and take in their cargoes at the town-wharves.

Small vessels, from the eastward, occasionally proceed to Halifax by the S.E. passage, within Macnab's Island, and on the eastern side of Lawler's. On the shoalest part of the bar of sand, which obstructs this passage, there are, however, but 8 feet at low water. Above the bar the depth increases to 5 and 10 fathoms, bottom of mud. On the bar of the channel between Macnab's and Lawler's Islands, there are but 3 feet at low water.

Herring Cove, on the western side of the harbour, 1¼ mile south-westward of Sandwich Point, has an entrance about 100 fathoms wide, and quite bold on either side, with 7, 5, and 4 fathoms up to the elbow that forms the inner cove, where small vessels may lie in perfect security in a depth of 7 to 9 feet.

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* It is said that there is great difficulty in making Halifax from the eastward, particularly in the winter season, in consequence of the winds being too frequently from the W.S.W. to N.W., and blowing so hard as to reduce a ship to very low canvas, if not to bare poles, and should the wind come to the eastward, it is invariably attended with such thick weather as to prevent an observation, or seeing to any great distance; hence, under such circumstances, it would be imprudent to run for the shore, more particularly in winter, when the easterly winds are attended with sleet and snow, which lodge about the masts, sails, rigging, and every part of the ship, becoming a solid body of ice so soon as the wind shifts round to the N.W., which it does suddenly from the eastward. These are circumstances of real difficulty; and it has been recommended, in such a case, to run far to the south-westward (avoiding the Gulf Stream), and thence from the S.W. coast, to keep the shore on board, all the way to Halifax.

Admiral Bayfield says, "In the present very imperfect state of our knowledge of the banks which lie off this coast (Nova Scotia), of the depth and nature of the soundings on them, and between them and the shore, no further directions can be safely given to vessels approaching the land during a dark night or in a thick fog, than not to go nearer than the depth of 40 fathoms, at the same time bearing in mind that there is that depth at a less distance than 3 miles from some of the most formidable of the dangers between Canso and Halifax."

In *Macnab's Cove*, formed by an indent of the island on the northern side of Maugher's Beach, there is good anchorage in from 9 to 4 fathoms, muddy bottom. The best spot is represented to be in 7 fathoms, with the extremity of Maugher's Beach touching Sandwich Point, and the tower on George Island touching Ives Point.

Mr. Davy, R.N., of H.M.S. Cornwallis, made the following remarks while proceeding from Halifax to Quebec. The Cornwallis left Halifax on June 4th, 1838:—

"Wind north, with fine weather, sailed with Pearl, Dee, and Charybdis for the Gut of Canso. Passed out between the Thrum Cap and Rock Head Shoals to within a cable's length of the Thrum Cap buoy, having 10 fathoms water; this channel is quite safe. Being thus clear, 27 miles led us to the southward of the Jedore Shoals; then east for White Head, wind and weather looking favourable. Just to the eastward of Cole Harbour* is a remarkable red cliff, making in a well-formed saddle; the red is bright, and the eastern coast, thereby, is easily recognised; while the coast to the westward of Halifax is known by its white cliffs. It is advisable for strangers running from Jedore to Canso not to approach the coast nearer than 10 miles, until abreast of Tor Bay. This is a spacious bay, having Berry Head at its western point and Cape Martingo at its eastern, 5 miles apart. White Head Island, immediately to the eastward of Tor Bay, is the most remarkable land on the coast, and is as a beacon to the pilots: it stands well out, and from the westward terminates the eastern view. Being 10 miles south of it, steer N.E. by E. for Canso Lighthouse, which is a tall white building, and makes well out to seaward, on a small low island, named Cranberry Island. It exhibits good fixed lights, which must be brought to bear West before keeping away; then steer N.N.W., until George Island bears West, thence N.W. and N.N.W. for Cape Argos. Avoiding the Cerberus Shoal, which is very dangerous, and directly in the track; leave it on your port hand. Cape Argos makes like a round island, and is bold to approach; passing this, the distance across the gut becomes narrowed to 1½ mile."—*Naut. Mag.*, 1839, p. 299.

CATCH HARBOUR.—At 1½ mile south-westward of Chebucto Head is the small harbour or cove named Catch Harbour, which has a bar of 9 feet at low water, right across the entrance, over which the sea breaks heavily, when the wind blows on shore. Within the bar there are 2 and 2½ fathoms. This harbour is too small, and the access to it is too difficult, to allow it to be frequented by any but the smallest vessels. At its head there is a stream of good fresh water.

COAST WESTWARD OF HALIFAX.—On the coast from Halifax, westward, to Margaret's Bay, the country appears, from the offing, very rocky, with numerous inlets, the shore being steep-to, and bounded with white rocky cliffs. The high lands of Aspotogon, on the east side of Mahone Bay, are very remarkable; and proceeding eastward from Mahone Bay the rocks which surround the shore are black, with some banks of red earth. Between Cape Le Have (which is a remarkable promontory, 107 feet above the sea, bald on the top, with a red bank under it, facing the south-westward) and Port Metway, there are some hummocks inland, about which the country appears low and level from the sea; and, on the shore, white rock and stony beaches, with several low bald points; hence to Shelburne Harbour the land is woody. About the entrance of Port Latour, and within land, are several barren spots, which, from the offing, are easily discerned; thence, to Cape Sable, the land appears level and low, and on the shore are some cliffs of exceedingly white sand, particularly at the entrance to Port Latour, and at Cape Sable, where they are very conspicuous from the sea.

ST. JOHN'S HARBOUR.—The entrance of this harbour bears from the entrance of the Gut of Annapolis N. ½ W., 11 leagues, and may be distinguished by the lighthouse on Partridge Island, which shows a fixed light at 119 feet above the level of the sea, visible 20 miles. The tower is painted red and white, in vertical stripes, and is furnished with a bell, to be tolled in thick or foggy weather; its position is lat. 45° 14′ 2″ N., and long. 66° 3′ 30″ W.

As a guide to vessels making St. John's, a large iron fog-bell has lately been placed in 7¼ fathoms, at the entrance of the harbour. It lies with Cape Spencer bearing S. 59° E.; Cape Mispick S. 62° E. 3¾ miles; Partridge Lighthouse N. 21° E. 1½ mile;

* A very shallow bay 4 miles eastward of Devil's Island.

Sheldon Point N. 49° W. 1¾ mile; Medginish south-east point N. 76° W. 2 miles; Cape Negro, red mark, S. 81° W. 4¼ miles; and Cape Split S. 78° W. The height of the bell above the buoy is 19 feet.

A beacon light is shown within Partridge Island, from a tower erected upon a spit or bar which runs out from Sand Point S.S.E. about half a mile, and which dries at two-thirds ebb. This light is of great utility to the coasters, and all other vessels having pilots on board, as it enables them to enter the harbour at all hours of the night.

North-east from the beacon light, just off the town, is a ridge of rocks which is covered at 2 hours' flood; from this ridge and eastward of the town are extensive flats of sand and mud, which dry at low water, and extend along the road to Cranberry Point, stretching off about 2 cables' lengths.

The bottom, for several miles southward of Partridge Island, is muddy, and the depths gradual, from 7 to 20 fathoms, affording excellent anchorage; the passage westward of this island has in it 10 feet; that to the eastward has 16 feet; and abreast of the city are from 7 to 12 fathoms.

A breakwater has been erected on the eastern side of the entrance to the harbour, below the town, for the purpose of reducing the inset of the sea, especially during a southerly gale.

The CITY OF ST. JOHN stands on the River St. John near its mouth, and carries on a considerable trade, and many ships are built here. Within the harbour is a valuable fishery, where large quantities of salmon, herrings, and chad are cured for exportation. In the most severe winter it is free from the incumbrance of ice. The country on the banks of the river abounds in excellent timber, coal, limestone, and other minerals. Partridge Island is about 2 miles to the southward of the city, answering the double purpose of protecting the harbour, and, by its lighthouse, guiding and directing the mariner to its entrance.

The entrance into the river, 2 miles above the town of St. John, is over the Falls, a narrow channel of 80 yards in breadth, and about 400 long. This channel is straight, and a ridge of rocks so extends across it as to retain the fresh water of the river. The common tides flowing here about 20 feet, at low water the level of the river is about 12 feet higher than that of the sea; and, at high water, the level of the sea is from 5 to 8 feet higher than that of the river; so that, in every tide, there are two falls, one outward and one inward. The only time of passing this place is when the water of the river is level with the water of the sea, which is twice in a tide; and this opportunity of passing continues not above 10 minutes: at all other times it is impassable, or extremely dangerous. After passing the Falls, you enter into a gullet, which is about a quarter of a mile wide, and two miles long, winding in several courses, and having about 16 fathoms in the channel. Having passed this gullet, you enter a fine large basin 1½ mile wide, and 8 miles long, which enters the main river. The river branches some hundreds of miles up, in a serpentine manner, and runs through a country which abounds with timber, coal, limestone, and many other minerals; and the surrounding lands are now becoming highly cultivated. There is water enough to navigate vessels of 50 tons as high as Frederickton, and in all the branches of the lakes adjacent except in dry seasons. At times of great freshes, which generally happen between the beginning of April and the middle of May, from the melting of the snow, the Falls are absolutely impassable to vessels bound up the river, as the tide does not rise to their level.

The following directions for St. John's Harbour and Meogenes Bay were written a few years since by Mr. Backhouse. It should be mentioned that from Captain Owen's survey it would appear that the passage on the east side of Partridge Island is the best, there being in the other only 7 to 12 feet, and some shoal spots of less water at low tide.

"When you make Meogenes Island, or Partridge Isle, so as to be distinguished from the lighthouse on the latter, then make a signal for a pilot, and the intelligence from Partridge Island will be immediately communicated to the city of St. John, whence a pilot will join you. Should the wind be contrary, or any other obstruction meet you, to prevent your obtaining the harbour that tide, you may sail in between the S.W. end of Meogenes Island and the main, or between the N.E. end and the main, and come to anchor in 4 or 5 fathoms at low water, mud and sandy bottom. The mark for the best anchoring ground here is, to bring the three hills in the country to

the N.E. in a line within Rocky Point Island,* and the house on Meogenes Island to bear S.E. by S.

Should the tide of ebb have taken place at the beacon, you must not, by any means, attempt to gain the harbour that tide, but wait the next half-flood, to go over the bar, as both sides of the entrance of this harbour are nothing but sharp rocks dry at low water: and the tide of ebb is so rapid in the spring, when the ice and snow are dissolved, that all the anchors on board will not hold the ship from driving.

On the Nova Scotia side of the Bay of Fundy, your soundings will be from 50 to 60, 70, 80, to 95 fathoms; stones like beans, and coarse sand; and as you draw to the northward, the quality of the ground will alter to a fine sand, and some small shells with black specks. Approach no nearer to the south shore than in 50 fathoms; and, as you edge off to the N.W. and W.N.W., you will fall off the bank, and have no soundings.

When you have passed Meogenes Island, edge in-shore toward Rocky Point, until Meogenes Point (*Negro Head*) is in a line over the N.W. corner of Meogenes Island; sailing in between Rocky Point and Partridge Island, with these marks in one, will lead you in the best water over the bar (9 to 15 feet), until you open Point Mispick to the northward of the low point on Partridge Island; then starboard your helm, and edge towards Thompson's Point, until the red store, at the south end of St. John's, is in a line over the beacon; keep them in one until you pass the beacon at a distance of a ship's breadth; then haul up N.N.W. up the harbour, keeping the blockhouse, at the upper part of the harbour, open to the westward of the king's store, situated close to the water-side, which will lead you, in mid-channel, up to the wharves, where you may lie aground dry, at half-tide, and clean your ship's bottom, or lie afloat in the stream at single anchor, with a hawser fast to the posts of the wharves on shore.—N.B. The tide of flood here is weak, but the ebb runs very rapidly all the way down past Meogenes Island."

The following directions are based on the details of the survey of Lieutenants Harding and Kortright, acting under the orders of Captain W. F. W. Owen, of the Royal Navy, in 1844.

When running for St. John's avoid the rocky ledge running off Inner Mispick Point, the eastern side of the entrance, to the distance of $2\frac{1}{2}$ cables' lengths, and which is steep-to, with 30 to 40 feet close off; and having brought the stone barracks in one with the Wesleyan Chapel,† at the back of the town, bearing N. $\frac{3}{4}$ E., steer in with this mark on, and it will carry you outside of the shoal water extending from the eastern side of Partridge Island. When Carleton Church comes in one with the cliff end (the termination of the cliffs forming Negro Point), bearing about N.W. $\frac{3}{4}$ N., you must change your course to this direction, and it will lead you in from 15 to 22 feet at $1\frac{1}{2}$ cable's length to the northward of the shoal ground extending between Partridge Island and Negro Point. Continue in this direction until the stone church at the back of the town comes on the end of the breakwater, when you must run up with this mark past the beacon-light into the harbour. When just above the beacon-light steer N. by W. or N. by W. $\frac{1}{4}$ W., and anchor off the town. Be careful to keep the lead going when following these directions, that you do not strike on the shoal spots.

To the north-eastward of the beacon-light, and just off the town, is a ridge of rocks which is covered at 2 hours' flood. From this ridge, and eastward of the town, there is an extensive flat of mud and sand which dries at low water; this extends along the coast to Cranberry Point, and runs about 2 cables' lengths from the shore. Cranberry Point is cliffy, and has some rocks running off it.

It is high water on the days of full and change at 11h. 44m.; spring-tides rise 23 to 25 feet, and neaps 21 to 23 feet.

SIGNALS.—The following signals are displayed at Partridge Island, on the approach of vessels to the harbour of St. John:—

One ball close for.....	1	square-rigged vessel.
One ball half-hoisted for.....	2	„

* This is an islet, lying at a cable's length from the point, and more properly named the *Shag Rock*. It is surrounded by sunken rocks.

† This building will be known by its octagonal tower with a circular top. It is situated in the N.E. part of the town.

Two balls close for	3	square-rigged vessel.
Two balls separated for	4	„
A pendant of any colour for	5	„
A pendant under a ball for.....	6	„
A pendant over a ball half-hoisted for ...	7	„
A pendant under two balls close for	8	„
A pendant under two balls separated for	9	„
A flag of any colour for	10 or more.	

The above are displayed at the east or west yard-arm, according to the direction in which the vessels are first observed; and as soon as their rig can be distinguished, descriptive colours will be hoisted at the masthead in the following order:—

A union jack, with a white pendant over.....	for a small armed vessel.	
A blue pendant	„	merchant ship.
A red ditto.....	„	merchant brig.
A white and blue ditto	„	foreign vessel.
A white ditto (without a ball)	„	top-sail schooner or sloop.
A red flag, pierced white	„	steamboat from St. Andrew's and Eastport.
A ball at the mast-head.....	vessel is on shore or in distress.	

Should immediate aid be necessary, guns to be fired. In foggy weather, a gun will be fired on Partridge Island in return for each heard at sea. Should a vessel require a pilot, her descriptive pendant will be displayed at a yard-arm, in the place of a ball.

In regard to the time for going through the Falls, near St. John, it may be mentioned that the Falls are level (or still water) at about $3\frac{1}{2}$ hours on the *flood*, and about $2\frac{1}{2}$ on the *ebb*, which makes them passable four times in twenty-four hours, about 10 or 15 minutes each time. No other rule can be given, as much depends on the floods in the River St. John, and the time of high water or full sea, which is often hastened by high winds, and in proportion to the height of them.

THE END.